امتحانات رقم (1)

الترم الثانى

Model (1)

30 Marks

A Choose the correct answer:

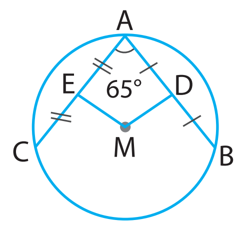
9

1. The parallelogram in which the two diagonals are equal in length is called ....
   (a square , a rectangle , a trapezium , a rhombus)
2. The point of concurrence of the medians of the triangle divides each median by the ratio .... from vertex. (1 : 2 , 1 : 3 , 2 : 1 , 3 : 1)
3. If the projection of a line segment on a straight line is a point, then the line segment is .... to the straight line. (// , ⊥ , ∈ , ⊂)
4. XYZL is a cyclic quadrilateral in which m(∠ X) =2 m(∠ Z), then m(∠ Z)= .... °.
   (60 , 45 , 90 , 120)
5. The sum of the measures of the interior angles of a quadrilateral equals .... °.
   (180 , 360 , 270 , 540)
6. If AB = 8 cm, then the circumference of the smallest circle passing through the two points A and B equals .... cm.
   (16 π , 10 π , 8 π , 64 π)
7. The width of a rectangle is 6 cm and its diagonal length is 10 cm, then its length is .... cm.
   (60 , 16 , 8 , 120)
8. If the lengths of two adjacent sides of a parallelogram are 7 cm, 9 cm, then the perimeter of this parallelogram is .... cm. (16 , 32 , 63 , 36)
9. If ABC is a triangle in which m (∠ B) = m (∠ C) = 60°, then the number of its symmetrical axes equals .... (0 , 1 , 2 , 3)

B Answer each of the following:

21

1. In the opposite figure: $\overline{AB}$, $\overline{AC}$ are two chords in a circle M, D, E are the two midpoints of $\overline{AB}$, $\overline{AC}$, m(∠BAC) = 65°.
   Find: m(∠DME)



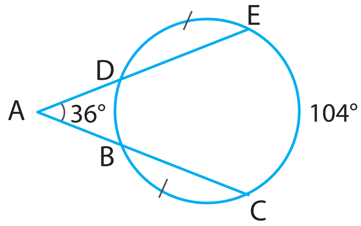
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2 In the opposite figure: $m(\angle A) = 36°$, $m(\overset{\frown}{EC}) = 104°$,

$m(\overset{\frown}{BC}) = m(\overset{\frown}{DE})$.

Find: $m(\overset{\frown}{BD})$, $m(\overset{\frown}{DE})$



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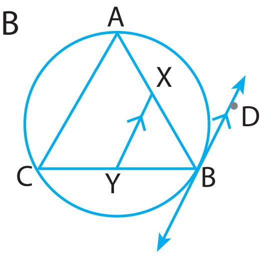
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3 In the opposite figure:

ABC is a triangle inscribed in a circle; $\overleftrightarrow{BD}$ is a tangent to the circle at B

$X \in \overline{AB}$, $Y \in \overline{BC}$, where $\overline{XY} \parallel \overleftrightarrow{BD}$,

Prove that: AXYC is a cyclic quadrilateral.



....

....

4 If M is a circle with radius length 10 cm, $\overleftrightarrow{MA} \perp$ straight line L , where $A \in$ straight line L , determine the position of the straight line L with respect to the circle M in each of the following cases:

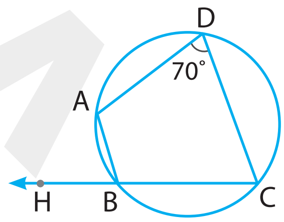
1- MA = 9 cm   2- MA =10 cm   3- MA = 12 cm

....

....

5 Complete: In the opposite figure:

– If $m(\angle ADC) = 70°$, then $m(\angle ABH) =$ .... °

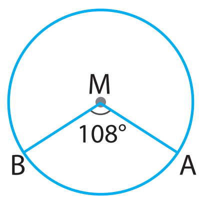


6 In the opposite figure:

M is a circle with radius length 5 cm.

$m(\angle AMB) = 108°$

Find: The length of $\overset{\frown}{AB}$ ($\pi = 3.14$)



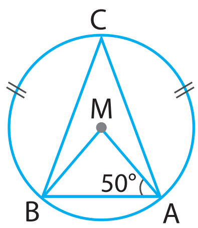
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7 In the opposite figure:

A circle M, $m(\overset{\frown}{AC}) = m(\overset{\frown}{BC})$, and $m(\angle MAB) = 50°$

Find with proof: 1– $m(\angle C)$ 2– $m(\overset{\frown}{AC})$



....

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30 Marks

Model (2)

A Choose the correct answer:

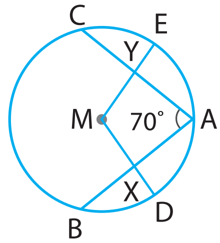
9

1. ABCD is a cyclic quadrilateral in which m(∠A) = 4 m(∠C), then m(∠C)= .... °.
   (36 , 180 , 90 , 150)
2. The measure of the reflex angle of the angle whose measure is 130° equals .... °.
   (360 , 330 , 320 , 230)
3. Two circles, the lengths of their radii are 5 cm, 9 cm, are touching when the distance between their centers ∈ ....
   ( ]0 , 4[, {4 , 14} ,]4 , ∞ [,]4 , 14[ )
4. The circumference of the circle whose diameter length is 10 cm equals ....
   (4π , 10π , 8π , 12π)
5. The number of altitudes of the isosceles triangle is ....
   (0 , 1 , 2 , 3)
6. ABCD is a rhombus, then the number of circles that pass through the vertices A, B, C is ....
   (0 , 1 , 2 , infinite)
7. If the straight line L is a tangent to the circle M of a diameter length 12 cm, then the distance between straight line L and the center of the circle equals .... cm.
   (12 , 6 , 8 , 4)
8. ABCD is a cyclic quadrilateral, m (∠ A) = 120˚ , then m (∠ C) = ...˚ .
   (60 , 120 , 180 , 240)
9. In Δ ABC , if $(AC)^2 = (AB)^2 + (BC)^2$, then (∠B) is a/an .... angle.
   (acute , right , obtuse , straight)

B Answer each of the following:

21

1. In the opposite figure: $\overline{AB}$, $\overline{AC}$ are two chords in the circle M ,
   X , Y are midpoints of $\overline{AB}$, $\overline{AC}$ respectively , m(∠CAB) = 70˚
   a- Find: m(∠DME)
   b- If XD = YE , prove that: AB = AC



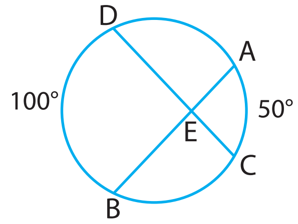
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2 In the opposite figure:

$\overline{AB} \cap \overline{CD} = \{E\}$, m $(\overset{\frown}{AC}) = 50°$, m $(\overset{\frown}{BD}) = 100°$

Find: m($\angle$AEC)



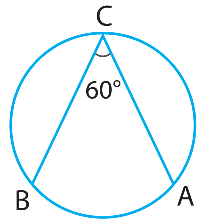
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3 Complete:

In the opposite figure:

If m($\angle$ACB) = 60° , then the length of $(\overset{\frown}{AB})$ = ...

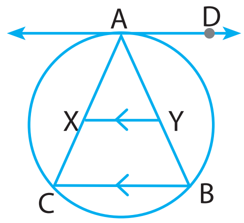


4 In the opposite figure:

ABC is a triangle inscribed in a circle,

$\overleftrightarrow{AD}$ is a tangent to the circle at A, $\overline{XY} // \overline{BC}$

Prove that: $\overleftrightarrow{AD}$ is a tangent to the circle passing through the points A , X , Y .

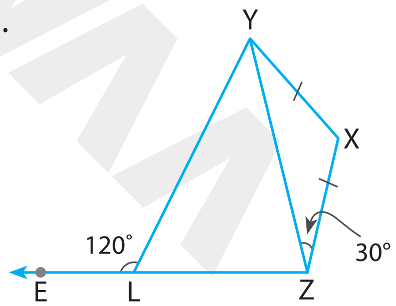


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5 XY = XZ , m($\angle$XZY) = 30°, m($\angle$ELY) = 120°, where E $\in \overrightarrow{ZL}$.

Prove that: YXZL is a cyclic quadrilateral.



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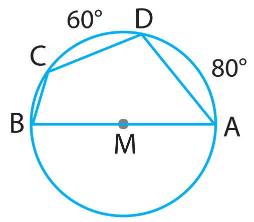
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6 In the opposite figure:

m $(\overset{\frown}{AD}) = 80°$, m $(\overset{\frown}{DC}) = 60°$, $\overline{AB}$ is a diameter of the circle M.

Find the measure of the interior angles of the figure ABCD.



....

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7 Two circles M and N with radii lengths 9 cm and 4 cm respectively. Show the position of each of them with respect to the other in each of the following cases:

a. MN = 12 cm   b. MN= 5 cm   c. MN= 4 cm

....

....

30 Marks — Model (3)

9

A Choose the correct answer:

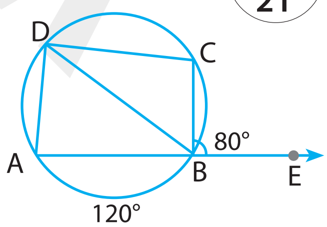
1. The point of concurrence of the medians of the triangle divides each median by the ratio .... from base. (1 : 2 , 1 : 3 , 2 : 1 , 3 : 1)
2. The number of symmetry axes of any circle is .... (0 , 2 , 3 , an infinite number)
3. In ΔABC, if $(AC)^2 = (AB)^2 + (BC)^2$, m(∠C) = 50° , then m(∠A) = ...° . (50 , 90 , 40 , 45)
4. If the lengths of two adjacent sides of a parallelogram are 4 cm, 6 cm, then the perimeter of this parallelogram is .... cm. (24 , 12 , 20 , 8)
5. The length of the diagonal of a square is 5 cm, then its surface area = ... cm^2. (25 , 5 , 12.5 , 20)
6. If the quadrilateral XYZL is a cyclic quadrilateral: then m (∠ Y) + m (∠L) =........ (90° , 120° , 360° , 180°)
7. If m (∠ A)= 120° ,then m (reflex ∠ A) = ... (220° , 360° , 240° , 180°)
8. The two similar triangles are congruent, then the enlargement ratio equals .... (0 , 1 , 2 , otherwise)
9. The parallelogram in which the two diagonals are perpendicular is called .... (a square , a rectangle , a trapezium , a rhombus)

B Answer each of the following:

21

1. E ∈ $\overrightarrow{AB}$, E ∉ $\overline{AB}$, m $(\overset{\frown}{AB})$ = 120° , m(∠CBE) = 80°,

   Find with proof: m(∠BDC).



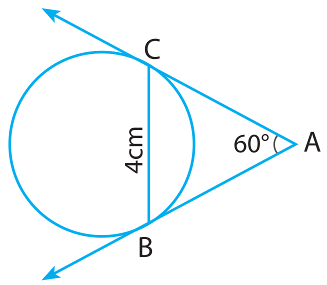
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2. Complete:

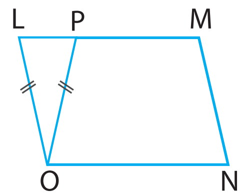
   In the opposite figure:

   $\overrightarrow{AB}$, $\overrightarrow{AC}$ are two tangents, then the perimeter of Δ ABC is .... cm.



3 LMNO is a parallelogram, OP = OL

Prove that: MNOP is a cyclic quadrilateral.



....

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4 If M is a circle with radius length 18 cm., $\overleftrightarrow{MN} \perp$ straight line S, where N $\in$ straight line S, determine the position of the straight line S with respect to the circle M in each of the following cases:

1. MN = 13 cm
2. MN =18 cm
3. MN = 20 cm

....

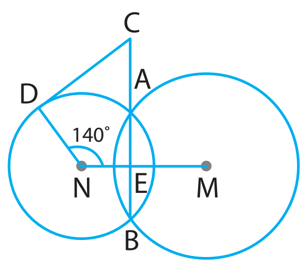
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5 In the opposite figure:

M , N are two intersecting circles at A, B,

$\overline{CD}$ is a tangent segment to the circle N, C $\in \overrightarrow{BA}$

, m($\angle$MND) =140°, find m($\angle$DCE).



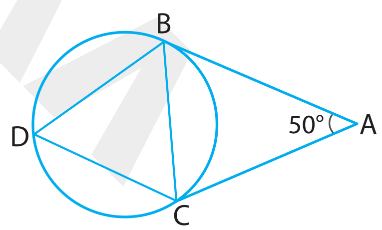
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6 In the opposite figure:

$\overline{AB}$ and $\overline{AC}$ are two tangent segments to the circle at B, C

, and m($\angle$A) = 50° , find with proof m($\angle$D).



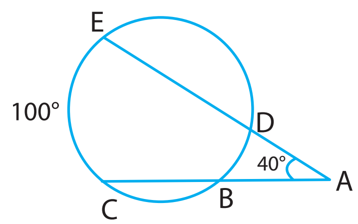
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7 In the opposite figure:

m($\angle$A) = 40° , m ($\overset{\frown}{EC}$) = 100°,

find with proof: m ($\overset{\frown}{BD}$)



....

....

30 Marks

Model (1)

A Choose the correct answer:

9

1. The parallelogram in which the two diagonals are equal in length is called ....
(a square , a rectangle , a trapezium , a rhombus)

2. The point of concurrence of the medians of the triangle divides each median by the ratio .... from vertex. (1 : 2 , 1 : 3 , 2 : 1 , 3 : 1)

3. If the projection of a line segment on a straight line is a point, then the line segment is .... to the straight line. (// , ⊥ , ∈ , ⊂)

4. XYZL is a cyclic quadrilateral in which m(∠ X) =2 m(∠ Z), then m(∠ Z)= ....°.
(60 , 45 , 90 , 120)

5. The sum of the measures of the interior angles of a quadrilateral equals ....°.
(180 , 360 , 270 , 540)

6. If AB = 8 cm, then the circumference of the smallest circle passing through the two points A and B equals .... cm.
(16 π , 10 π , 8 π , 64 π)

7. The width of a rectangle is 6 cm and its diagonal length is 10 cm, then its length is .... cm.
(60 , 16 , 8 , 120)

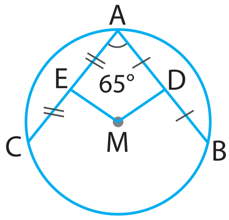
8. If the lengths of two adjacent sides of a parallelogram are 7 cm, 9 cm, then the perimeter of this parallelogram is .... cm.
(16 , 32 , 63 , 36)

9. If ABC is a triangle in which m (∠ B) = m (∠ C) = 60˚, then the number of its symmetrical axes equals .... (0 , 1 , 2 , 3)

B Answer each of the following:

21

1. In the opposite figure: $\overline{AB}$, $\overline{AC}$ are two chords in a circle M,
D, E are the two midpoints of $\overline{AB}$, $\overline{AC}$, m(∠BAC) = 65°.
Find: m(∠DME)



Answer

∵ E is midpoint of $\overline{AC}$ ∴ $\overline{ME} \perp \overline{AC}$, m(∠AEM) = 90°

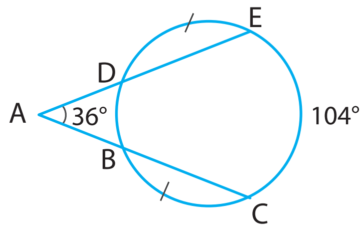
∵ D is midpoint of $\overline{AB}$ ∴ $\overline{MD} \perp \overline{AB}$, m(∠ADM) = 90°

∴ m(∠DME) = 360° – (90° + 90° + 65°) = 115°

2 In the opposite figure: $m(\angle A) = 36°$, $m(\overset{\frown}{EC}) = 104°$,

$m(\overset{\frown}{BC}) = m(\overset{\frown}{DE})$.

Find: $m(\overset{\frown}{BD})$, $m(\overset{\frown}{DE})$



Answer

$\because m(\angle A) = \frac{1}{2}[m(\overset{\frown}{EC}) - m(\overset{\frown}{BD})]$

$\therefore 36° = \frac{1}{2}[104° - m(\overset{\frown}{BD})]$ $\therefore m(\overset{\frown}{BD}) = 32°$

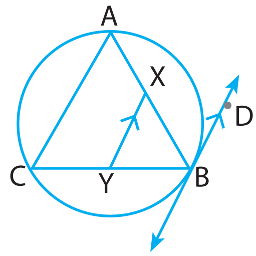
$\therefore m(\overset{\frown}{DE}) = m(\overset{\frown}{BC}) = \frac{360° - (104° + 32°)}{2} = 112°$

3 In the opposite figure:

ABC is a triangle inscribed in a circle; $\overleftrightarrow{BD}$ is a tangent to the circle at B

$X \in \overline{AB}$, $Y \in \overline{BC}$, where $\overline{XY} // \overleftrightarrow{BD}$,

Prove that: AXYC is a cyclic quadrilateral.



Answer

$\because \overline{XY} // \overleftrightarrow{BD}$, and $\overline{AB}$ is transversal.

$\therefore m(\angle DBX) = m(\angle BXY)$ (alternate angles)

$\therefore m(\angle C)$ (inscribed) $= m(\angle ABD)$(tangency) $\therefore m(\angle C) = m(\angle BXY)$

$\therefore$ AXYC is a cyclic quadrilateral.

4 If M is a circle with radius length 10 cm, $\overleftrightarrow{MA} \perp$ straight line L, where $A \in$ straight line L, determine the position of the straight line L with respect to the circle M in each of the following cases:

1- MA = 9 cm   2- MA = 10 cm   3- MA = 12 cm

Answer

$\because$ MA = 9 cm < r

$\therefore$ straight line L is a secant to the circle M.

$\because$ MA = 10 cm = r

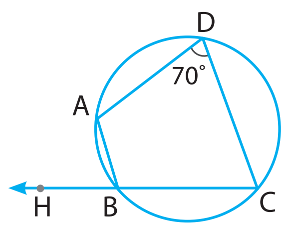
$\therefore$ straight line L is a tangent to the circle M.

$\because$ MA = 12 cm > r

$\therefore$ straight line L is outside to the circle M.

5 Complete: In the opposite figure:

– If $m(\angle ADC) = 70°$, then $m(\angle ABH) = ...70......°$

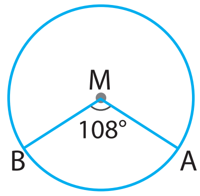


6 In the opposite figure:

M is a circle with radius length 5 cm.

m ($\angle$AMB) = 108°

Find: The length of $\overset{\frown}{AB}$ (π = 3.14)



Answer

$\because$ m($\overset{\frown}{AB}$) = m($\angle$M) = 108°

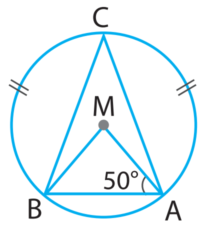
The length of $\overset{\frown}{AB} = \frac{m(\overset{\frown}{AB})}{360°} \times 2\pi r$

$= \frac{108°}{360°} \times 2 \times 3.14 \times 5 = 9.42$ cm

7 In the opposite figure:

A circle M, m($\overset{\frown}{AC}$) = m ($\overset{\frown}{BC}$), and m($\angle$MAB) = 50°

Find with proof: 1– m($\angle$C)   2– m ($\overset{\frown}{AC}$)



Answer

$\because$ In Δ ABC , MA = MB = r

$\therefore$ m($\angle$MAB) = m($\angle$MBA) = 50° $\therefore$ m($\angle$AMB) = 180° – (50° + 50°) = 80°

$\therefore$ m($\angle$C) = $\frac{1}{2}$ m($\angle$AMB) = 40° (inscribed and central angles are subtended by ($\overset{\frown}{AB}$))

$\because$ m($\overset{\frown}{AB}$) = m($\angle$AMB) = 80°

$\therefore$ m ($\overset{\frown}{AC}$) = $\frac{360° - 80°}{2}$ = 140°

30 Marks

Model (2)

A Choose the correct answer:

9

1. ABCD is a cyclic quadrilateral in which m(∠A) = 4 m(∠C), then m(∠C)= .... °.
   (36 , 180 , 90 , 150)

2. The measure of the reflex angle of the angle whose measure is 130° equals .... °.
   (360 , 330 , 320 , 230)

3. Two circles, the lengths of their radii are 5 cm, 9 cm, are touching when the distance between their centers ∈ ....
   ( ]0 , 4[, {4 , 14} ,] 4 , ∞ [,]4 , 14[ )

4. The circumference of the circle whose diameter length is 10 cm equals ....
   (4π , 10π , 8π , 12π)

5. The number of altitudes of the isosceles triangle is ....
   (0 , 1 , 2 , 3)

6. ABCD is a rhombus, then the number of circles that pass through the vertices A, B, C is ....
   (0 , 1 , 2 , infinite)

7. If the straight line L is a tangent to the circle M of a diameter length 12 cm, then the distance between straight line L and the center of the circle equals .... cm.
   (12 , 6 , 8 , 4)

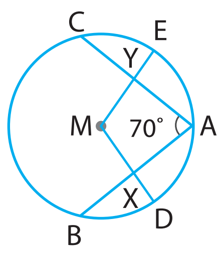
8. ABCD is a cyclic quadrilateral, m (∠ A) = 120˚ , then m (∠ C) = ...˚ .
   (60 , 120 , 180 , 240)

9. In Δ ABC , if $(AC)^2 = (AB)^2 + (BC)^2$, then (∠B) is a/an .... angle.
   (acute , right , obtuse , straight)

B Answer each of the following :

21

1. In the opposite figure: $\overline{AB}$, $\overline{AC}$ are two chords in the circle M , X , Y are midpoints of $\overline{AB}$, $\overline{AC}$ respectively , m(∠CAB) = 70˚
   a- Find: m(∠DME)
   b- If XD = YE , prove that: AB = AC



Answer

$\because$ Y is midpoint of $\overline{AC}$ $\quad\therefore \overline{ME} \perp \overline{AC}$, $m(\angle AYM)=90^\circ$

X is midpoint of $\overline{AB}$ $\quad\therefore \overline{MD} \perp \overline{AB}$, $m(\angle AXM)=90^\circ$

$\therefore$ $m(\angle DME) = 360^\circ - (90^\circ + 90^\circ + 70^\circ) = 110^\circ$

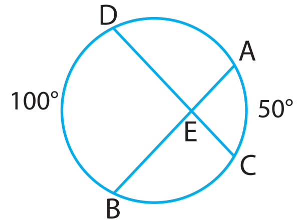
$\because$ ME = MD = r , XD = YE

$\therefore$ MY = MX $\quad\therefore$ AB = AC

2 In the opposite figure:

$\overline{AB} \cap \overline{CD} = \{E\}$, $m(\overset{\frown}{AC}) = 50^\circ$, $m(\overset{\frown}{BD}) = 100^\circ$

Find: $m(\angle AEC)$



Answer

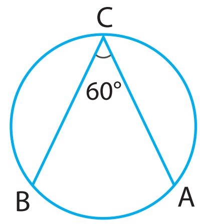
$$m(\angle AEC) = \frac{1}{2}[m(\overset{\frown}{BD}) + m(\overset{\frown}{AC})]$$

$$= \frac{1}{2}[\ 100^\circ + 50^\circ\ ] = 75^\circ$$

3 Complete:

In the opposite figure:

If $m(\angle ACB) = 60^\circ$, then the length of $(\overset{\frown}{AB}) = \ldots \frac{2}{3}\pi r \ldots\ldots$.

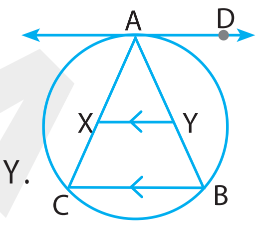


4 In the opposite figure:

ABC is a triangle inscribed in a circle,

$\overleftrightarrow{AD}$ is a tangent to the circle at A, $\overline{XY} \parallel \overline{BC}$

Prove that: $\overleftrightarrow{AD}$ is a tangent to the circle passing through the points A , X , Y .



Answer

$\because$ $\overline{XY} \parallel \overline{BC}$ and $\overleftrightarrow{AC}$ is a transversal

$\therefore$ $m(\angle AXY) = m(\angle C)$ (corresponding angles) ….. (1)

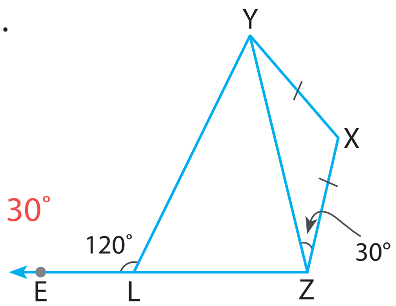
$\because$ $m(\angle C)$ (inscribed) $= m(\angle BAD)$ (tangency) …… (2)

From (1) and (2) $\quad\therefore$ $m(\angle AXY) = m(\angle BAD)$

$\therefore$ $\overleftrightarrow{AD}$ is a tangent to the circle passing through the points A , X , Y.

5 XY = XZ , $m(\angle XZY) = 30^\circ$, $m(\angle ELY) = 120^\circ$, where $E \in \overrightarrow{ZL}$.

Prove that: YXZL is a cyclic quadrilateral.



Answer

In ΔXYZ: $\because$ XY = XZ $\quad\therefore$ $m(\angle XYZ) = m(\angle XZY) = 30^\circ$

$\therefore$ $m(\angle X) = 180^\circ - (30^\circ + 30^\circ) = 120^\circ$

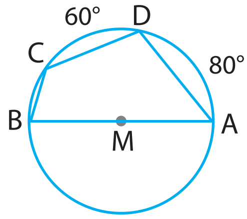
$\because$ m($\angle$X) = m($\angle$YLE) = 120°

$\therefore$ YXZL is a cyclic quadrilateral.

6 In the opposite figure:

m ($\overset{\frown}{AD}$) = 80° , m ($\overset{\frown}{DC}$) = 60°, $\overline{AB}$ is a diameter of the circle M.

Find the measure of the interior angles of the figure ABCD.



Answer

$\because$ $\overline{AB}$ is a diameter of the circle M. $\therefore$ m ($\overset{\frown}{AB}$) = 180°

$\therefore$ m ($\overset{\frown}{BC}$) = 180° - (60° + 80°) = 40°

$\therefore$ m($\angle$A) = $\frac{1}{2}$ m ($\overset{\frown}{BD}$) = 100° ÷ 2 = 50° (inscribed angle)

$\therefore$ m($\angle$B) = $\frac{1}{2}$ m ($\overset{\frown}{AC}$) = 140° ÷ 2 = 70° (inscribed angle)

$\because$ ABCD is a cyclic quadrilateral.

$\therefore$ m($\angle$C) = 180° – m($\angle$A) = 180° – 50° = 130°

, m($\angle$D) = 180° – m($\angle$B) = 180° – 70° = 110°

7 Two circles M and N with radii lengths 9 cm and 4 cm respectively. Show the position of each of them with respect to the other in each of the following cases:

a. MN = l2 cm b. MN= 5 cm c. MN= 4 cm

Answer

r_1 = 9 cm , r_2 = 4 cm , $r_1 + r_2$ = 13 cm , $r_1 - r_2$ = 5 cm

a. $\because$ MN = 12 cm $\therefore$ $r_1 - r_2 < MN < r_1 + r_2$

$\therefore$ The two circles are intersecting.

b. $\because$ MN = 5 cm $\therefore$ $r_1 - r_2 = MN$

$\therefore$ The two circles are touching internally.

c. $\because$ MN = 4 cm $\therefore$ $r_1 - r_2 > MN$

$\therefore$ One of the two circles is inside the other.

Model (3)

30 Marks

A Choose the correct answer:

9

1. The point of concurrence of the medians of the triangle divides each median by the ratio .... from base.

   (1 : 2 , 1 : 3 , 2 : 1 , 3 : 1)

2. The number of symmetry axes of any circle is ....

   (0 , 2 , 3 , an infinite number)

3. In ΔABC, if $(AC)^2 = (AB)^2 + (BC)^2$, m(∠C) =50° , then m(∠A) = ...° .

   (50 , 90 , 40 , 45)

4. If the lengths of two adjacent sides of a parallelogram are 4 cm, 6 cm, then the perimeter of this parallelogram is .... cm.

   (24 , 12 , 20 , 8)

5. The length of the diagonal of a square is 5 cm, then its surface area = ... cm^2.

   (25 , 5 , 12.5 , 20)

6. If the quadrilateral XYZL is a cyclic quadrilateral: then m (∠ Y) + m (∠L) =.......

   (90° , 120° , 360° , 180°)

7. If m (∠ A)= 120° ,then m (reflex ∠ A) = ... (220° , 360° , 240° , 180°)

8. The two similar triangles are congruent, then the enlargement ratio equals ....

   (0 , 1 , 2 , otherwise)

9. The parallelogram in which the two diagonals are perpendicular is called ....

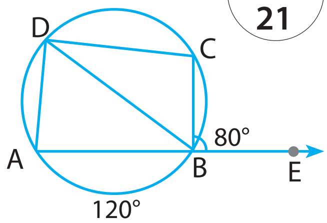
   (a square , a rectangle , a trapezium , a rhombus)

B Answer each of the following:

21

1. E ∈ $\overrightarrow{AB}$, E ∉ $\overline{AB}$, m $(\overset{\frown}{AB})$ =120° , m(∠CBE) = 80°,

   Find with proof: m(∠BDC).



Answer

∵ m(∠ADB)= $\frac{1}{2}$ m$(\overset{\frown}{AB})$

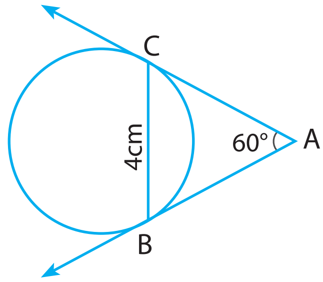
∴ m(∠ADB)= 120° ÷ 2 = 60°

∵ ABCD is a cyclic quadrilateral.

∴ m(∠ADC) = m(∠CBE) = 80°

∴ m(∠BDC) = 80° – 60° = 20°

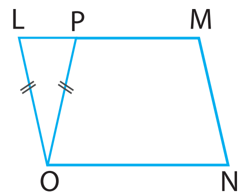
2 Complete:



In the opposite figure:

$\overrightarrow{AB}$, $\overrightarrow{AC}$ are two tangents, then the perimeter of Δ ABC is ……12…… cm.

3 LMNO is a parallelogram, OP = OL



Prove that: MNOP is a cyclic quadrilateral.

Answer

In ΔLOP , ∵ OP=OL

∴ m(∠L) = m(∠LPO)

∵ LMNO is a parallelogram.

∴ m(∠L) = m(∠N) , ∴ m(∠N) = m(∠LPO)

∴ MNOP is a cyclic quadrilateral.

4 If M is a circle with radius length 18 cm., $\overleftrightarrow{MN}$ ⊥ straight line S, where N ∈ straight line S, determine the position of the straight line S with respect to the circle M in each of the following cases:

1. MN = 13 cm 2. MN =18 cm 3. MN = 20 cm

Answer

∵ MN = 13 cm < r

∵ straight line S is a secant to the circle M.

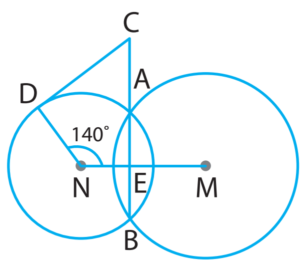
∴ MN = 18 cm = r

∴ straight line S is a tangent to the circle M.

∵ MN = 20 cm > r

∴ S is outside to the circle M.

5 In the opposite figure:



M , N are two intersecting circles at A, B,

$\overline{CD}$ is a tangent segment to the circle N, C ∈ $\overrightarrow{BA}$

, m(∠MND) =140°, find m(∠DCE).

Answer

$\because \overleftrightarrow{MN}$ is the line of centers of the two circles, $\overline{AB}$ is the common chord

$\therefore \overleftrightarrow{MN} \perp \overline{AB}$, $\therefore m(\angle AEN) = 90^\circ$

$\because \overline{CD}$ is a tangent segment to the circle N at D.

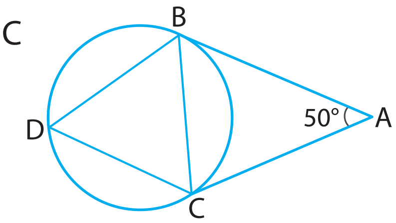
$\therefore \overline{ND} \perp \overline{CD}$, $\therefore m(\angle CDN) = 90^\circ$

From the quadrilateral CDNE

$\therefore m(\angle DCE) = 360^\circ - (140^\circ + 90^\circ + 90^\circ) = 40^\circ$

6 In the opposite figure:

$\overline{AB}$ and $\overline{AC}$ are two tangent segments to the circle at B, C , and $m(\angle A) = 50^\circ$, find with proof $m(\angle D)$.



Answer

$\because \overline{AB}$ and $\overline{AC}$ are two tangent segments to the circle.

$\therefore AB = AC$

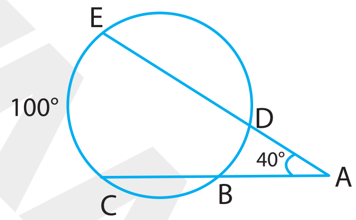
$\therefore$ In ΔABC , $m(\angle ABC) = m(\angle ACB) = (180^\circ - 50^\circ) \div 2 = 65^\circ$

$\therefore m(\angle D)$ (inscribed) $= m(\angle ACB)$(tangency) $= 65^\circ$

7 In the opposite figure:

$m(\angle A) = 40^\circ$, $m(\overset{\frown}{EC}) = 100^\circ$,

find with proof: $m(\overset{\frown}{BD})$



Answer

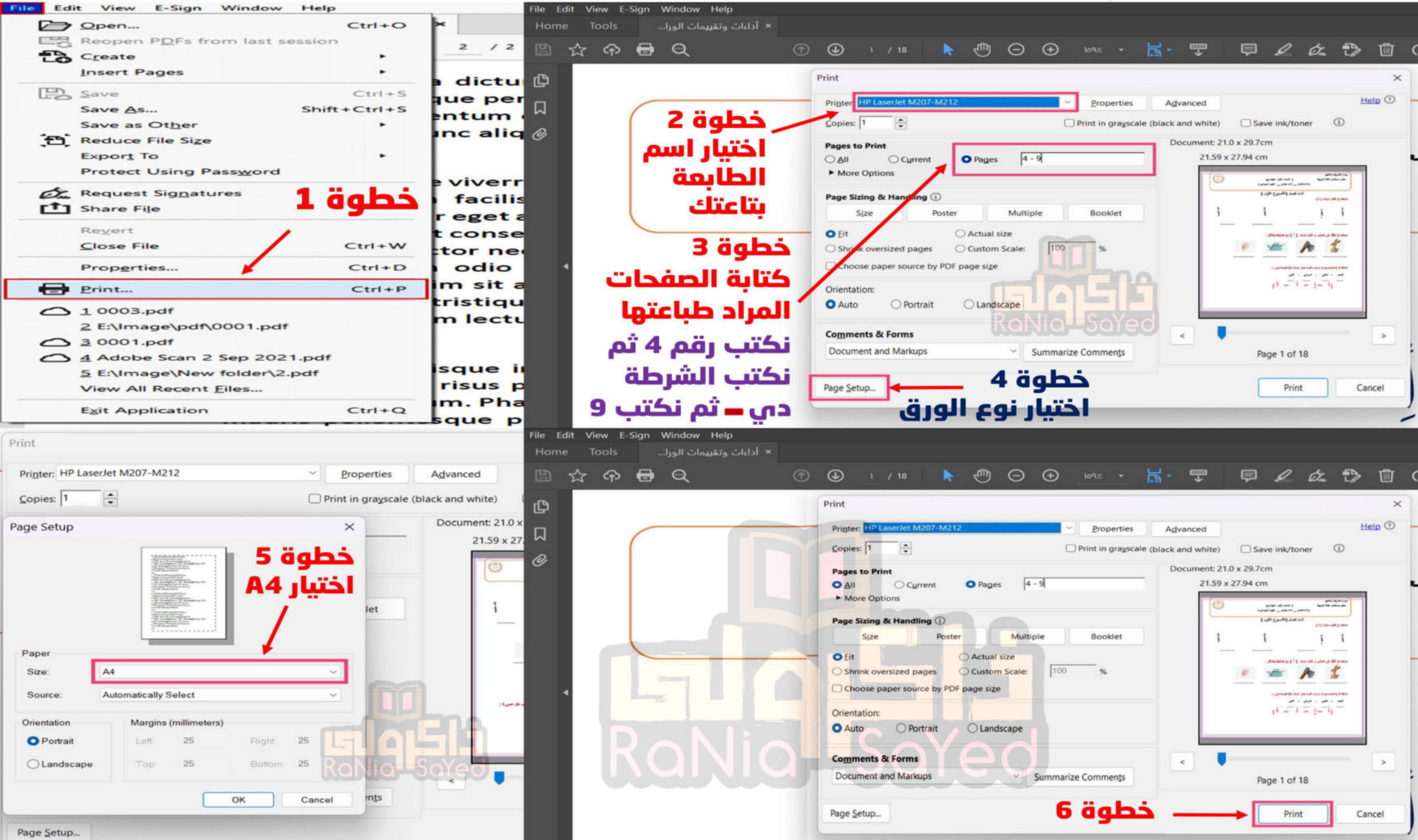
$\because m(\angle A) = \frac{1}{2} [m(\overset{\frown}{EC}) - m(\overset{\frown}{BD})]$

$\therefore 40^\circ = \frac{1}{2} [100^\circ - m(\overset{\frown}{BD})]$

$\therefore m(\overset{\frown}{BD}) = 100^\circ - 80^\circ = 20^\circ$

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9



امتحانات رقم (2)

الترم الثانى

محافظة القاهرة
مديرية التربية و التعليم

نموذج استرشادي لامتحان إتمام الدراسة بمرحلة التعليم الأساسي

الفصل الدراسي الثاني 2024 / 2025 م

المادة : الهندسة المستوية بالإنجليزية

التاريخ : .... / .... / 2025 م

زمن الإجابة : ساعتان

عدد أوراق الإجابة (6) ورقات بخلاف الغلاف
و على الطالب مسئولية المراجعة
و التأكد من ذلك قبل تسليم الكراسة
فى نهاية الوقت المخصص للإجابة

رقم السؤال	الدرجة رقما	الدرجة كتابتا	التوقيع	
			المقدر	المراجع
من 1 إلى 9				
من 10 إلى 11				
من12 إلى 13				
من14 إلى 15				
16 + التجميع				
المجموع				

مجموع الدرجات

رقم المراقبة

قطع

نموذج استرشادي امتحان إتمام الدراسة بمرحلة التعليم الأساسي

رقم المراقبة

الفصل الدراسي الثاني 2024 / 2025 م

المادة : الهندسة المستوية بالإنجليزية

التاريخ : .... / ...... / 2025م

زمن الإجابة : ....

عدد أوراق الإجابة (6) ورقات بخلاف الغلاف
و على الطالب مسئولية المراجعة
و التأكد من ذلك قبل تسليم الكراسة
في نهاية الوقت المخصص للإجابة

الإدارة التعليمية : ....

اسم الطالب رباعيا : ....

المدرســـــــــة : ....

رقم الجلوس : ....

توقيع الملاحظين :

1- ....

2 - ....

توقيع الملاحظين بصحة بيانات الطالب
كما وردت رقم جلوس الطالب
و مطابقة عدد أوراق كراسة الإجابة عند
استلامها من الطالب

غير مصرح بالكتابة

في هذه الصفحة

Group (1) : Choose the correct answer from those given:

1 The angle of measure 70° supplements an angle of measure ……….°

(a) 20 (b) 70 (c) 110 (d) 180

…………………………………………………………………………………………

…………………………………………………………………………………………

2 The measure of the inscribed angle equals ……… the measure of the opposite arc.

(a) quarter (b) third (c) half (d) double

…………………………………………………………………………………………

…………………………………………………………………………………………

3 The sum of measures of the interior angles of the triangle equals ……….°

(a) 90 (b) 120 (c) 150 (d) 180

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4 If AB = 10 cm , then the radius length of the smallest circle passes through the two points A and B equals ………. cm

(a) 2 (b) 5 (c) 10 (d) 15

…………………………………………………………………………………………

…………………………………………………………………………………………

5 If M and N are two circles touching internally and the lengths of their radii are 5 cm , 8 cm , then MN = ………. cm

(a) 3 (b) 5 (c) 8 (d) 13

…………………………………………………………………………………………

…………………………………………………………………………………………

بقية الأسئلة في الصفحات التالية

6 If the figure ABCD is a cyclic quadrilateral and m ($\angle$ A) = 80°, then the measure of the exterior angle at the vertex C equals ……… $^\circ$

(a) 10 (b) 60 (c) 80 (d) 180

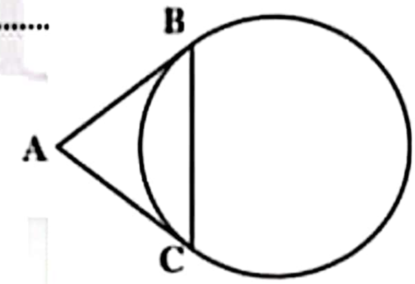
7 The line segment joining the centre of the circle and a point on it is called …………

(a) a chord (b) a radius (c) a diameter (d) a tangent

8 The length of the arc opposite to a central angle of measure 90° in a circle whose circumference is 36 cm equals ………. cm

(a) 18 (b) 12 (c) 9 (d) 3

9 **In the opposite figure:**



$\overline{AB}$, $\overline{AC}$ are two tangents to the circle at B and C,

If AB = 5 cm and BC = 6 cm ,

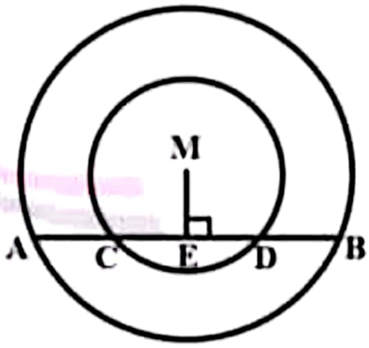
then the perimeter of the triangle ABC = …….. cm

(a) 10 (b) 11 (c) 16 (d) 1

بقية الأسئلة في الصفحات التالية

Group (2) Answer the following questions:

(10) In the opposite figure:



Two concentric circles of centre M

$\overline{AB}$ is a chord in the larger circle intersects the smaller circle at C and D ,

if $\overline{ME} \perp \overline{AB}$, Prove that AC = BD

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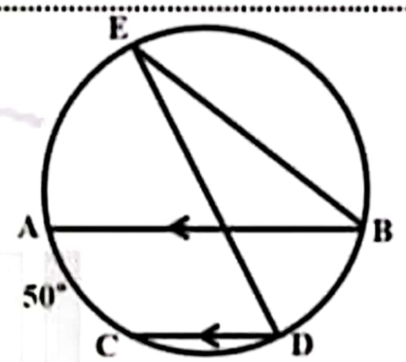
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(11) In the opposite figure::



$\overline{AB} // \overline{CD}$, if m $(\widehat{AC})$ = 50o

find with proof m(∠ DEB)

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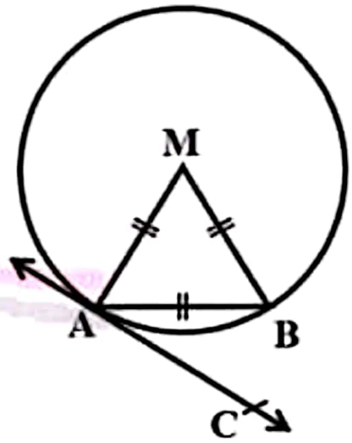
بقية الأسئلة في الصفحات التالية

(12) In the opposite figure:

$\overleftrightarrow{AC}$ is a tangent to the circle M at A ,

triangle MAB is an equilateral triangle

find with proof m (∠ BAC)



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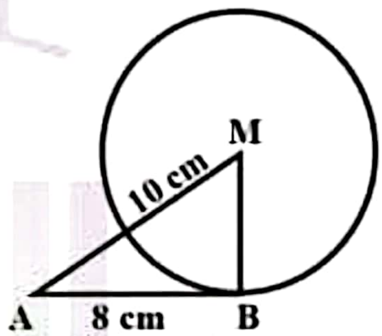
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(13) In the opposite figure:

$\overline{AB}$ is a tangent segment to the circle M at B ,

if AB = 8 cm , AM = 10 cm

find with proof the length of $\overline{MB}$



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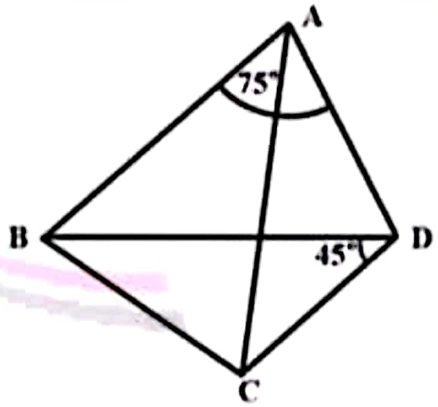
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بقية الأسئلة في الصفحات التالية

(14) <u>In the opposite figure:</u>



ABCD is a cyclic quadrilateral

m ($\angle$ BDC) = 45°, m ($\angle$ BAD) = 75°

find with proof m($\angle$ CAD)

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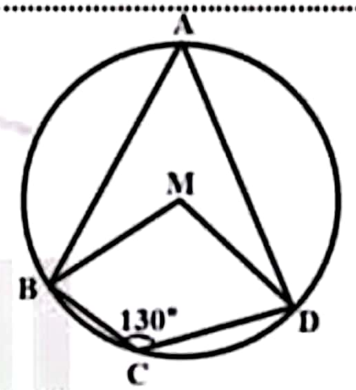
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(15) <u>In the opposite figure:</u>



M is a circle, m ($\angle$ BCD) = 130°

find with proof m($\angle$ BMD)

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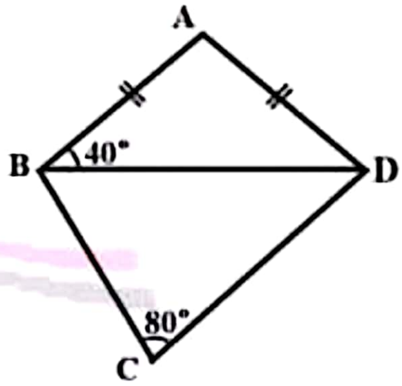
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بقية الأسئلة في الصفحة التالية

(16) In the opposite figure:



AB = AD , m (∠ ABD) = 40° , m (∠ C) = 80°

prove that:

the figure ABCD is a cyclic quadrilateral

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(انتهت الأسئلة مع خالص الدعاء بالتوفيق)

مسودة

Ministry of Education

Alexandria Governorate

Public education

Maths supervision

Second Term Exam (May)

.The completion of the basic education certificate

Academic Year 1446 \ 2025

Guidance Model (Math Subject)		
Geometry	Duration : 2 hours	Allow use Calculator

Number of Pages (12) with cover and It is the student's responsibility to review and ensure this before submitting the booklet.

Question	Mark	Mark with letters	Signature
1			
2			
3			
4			
5			
Total			

Mark

Secret Number

Collect: .... Reviser : ....

Secret Number	The completion of the basic education certificate Academic Year 1446 \ 2025 Alexandria Education Directorate - Public education ((Guidance Model))

Student Name : ....

Seat Number : .... School : ....

Signature of observers : 1) 2)

Writing is not allowed in this page

Arab Republic of Egypt Ministry of Education Alexandria Governorate	Second Term Exam (May) The completion of the basic education certificate Academic Year 1446 \ 2025	Subject : Geometry Duration : 2 hours (Allow use calculator)

First Question: (A) Choose the correct answer from the given answer:

1) A circle of a diameter 10 cm and the distance between the straight line L and its center is 7 cm , then the straight line L is ………………………

   a) a tangent to the circle b) a secant to the circle
   c) outside the circle d) a diameter of the circle

2) ABCD is a cyclic quadrilateral in which $m(\angle A):m(\angle B) = 4:5$, $then\ m(\angle C) =$ ……….

   a) 100° b) 180° c) 90° d) 80°

3) The number of axes of symmetry of the semicircle is ………….

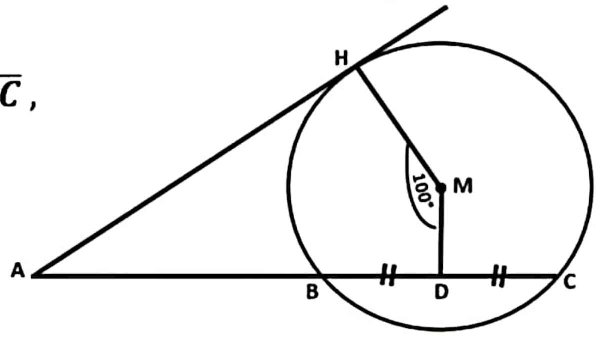
   a) Zero b) 1 c) 2 d) infinite number

(B) Answer the following: In the opposite figure:

A circle M , $m(\angle DMH) = 100°$, D is a midpoint of $\overline{BC}$,

$\overline{AH}$ is a tangent to the circle at ,

Find with proof $m(\angle HAC)$



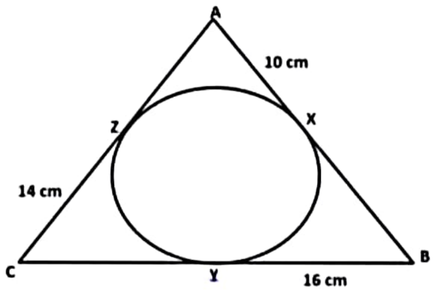
Solution

Second Question: (A) Choose the correct answer from the given answer:

1) The measure of the inscribed angle which subtended an arc of measure 120° is ....
   a) 240° b) 120° c) 90° d) 60°

2) The perimeter of a rhombuses whose diagonals lengths are 12 cm , 16 cm is ....cm
   a) 10 b) 28 c) 40 d) 120

3) **In the opposite figure**
   The circle M is an inscribed circle of $\Delta\, ABC$ which touches the sides $\overline{AB}\,,\overline{BC}\,,\overline{CA}$ *in* $x\,,y\,,z$ respectively , $AX = 10\ cm\,, BY = 16\ cm\,, CZ = 14\ cm$
   Then the perimeter of $\Delta\, ABC$ is .... cm

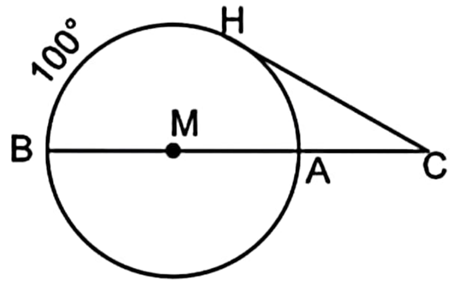


   a) 40 b) 80 c) 60 d) 120

(B) Answer the following: in the opposite figure

$\overline{AB}$ is a diameter of circle M , $\overline{HC}$ is a tangent to the circle at H , $m(\widehat{BH}) = 100°$

Find with proof $m(\angle C)$



Solution

Third Question: (A) Choose the correct answer from the given answer:

1) The slope of the straight line whose equation : $3x - y = 5$ is ....

a) 3 b) -3 b) $\frac{1}{3}$ d) $\frac{-1}{3}$

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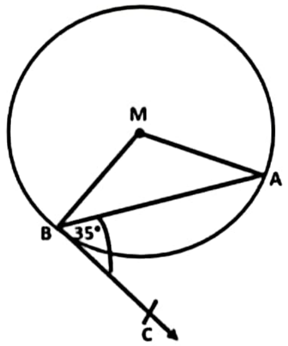
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2) In the opposite figure

$\overrightarrow{BC}$ is a tangent to the circle M at B

$m(\angle ABC) = 35°$,

then $m(\angle AMB) =$ ....°



a) 35 b) 70 c) 70 d) 110

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3) A chard of 24 cm is drawn in a circle M , if the length of its radius is 13 cm , then the distance between the center and the chard is ....cm

a) 12 b) 8 c) 10 d) 5

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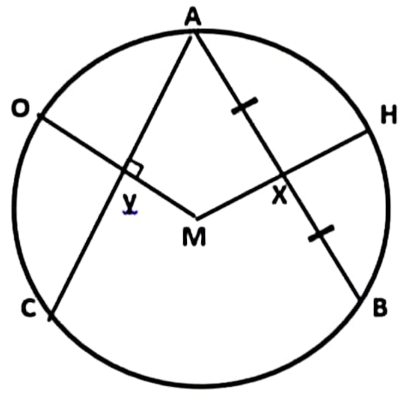
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(B) In the opposite figure

$\overline{AB}$, $\overline{AC}$ are two chards of equal length in circle

M , X is a midpoint of $\overline{AB}$, $\overline{My} \perp \overline{AC}$

Prove that $XH = YO$



Solution

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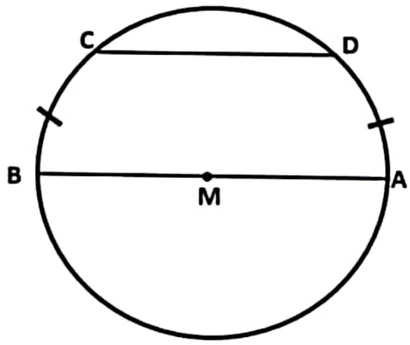
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Fourth Question: (A) In the opposite figure :



$\overline{AB}$ **is a diameter** $m(\widehat{BC}) = m(\widehat{AD}), m(\widehat{DC}) = 60°$

First) if DC = 5cm , Find the perimeter of ΔDMC

Second) Find $m(\angle ADC)$

Solution

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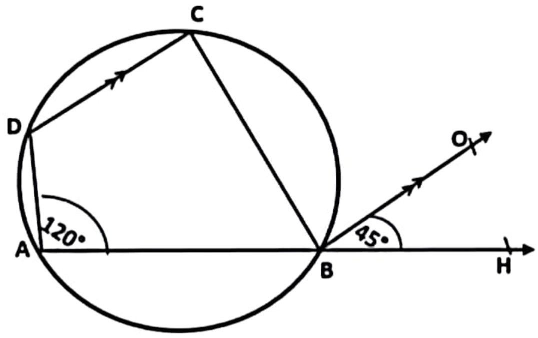
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(B) In the opposite figure



$\overrightarrow{BO} \backslash\backslash \overline{DC}, m(\angle BAC) = 120°$

$m(\angle HBO) = 45°$

Find with proof $m(\angle CDA)$

Solution

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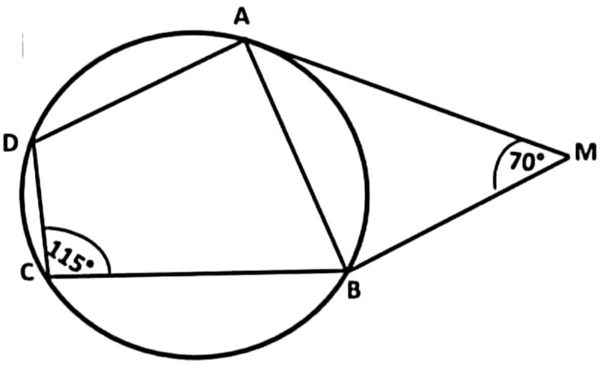
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Fifth Question: (A) In the opposite figure:



$\overline{HA}$, $\overline{HB}$ are two tangent segments of a circle M at A , B

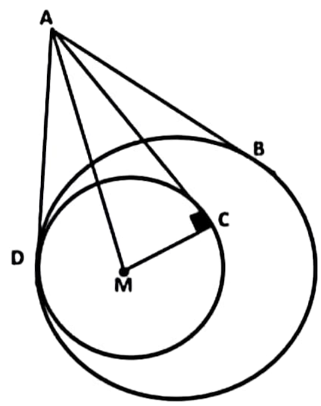
$m(\angle AHB) = 70°$, $m(\angle DCB) = 115°$

First) Prove that BA = BD

Second) Prove that $\overrightarrow{BA}$ $bisects$ (HAD)

Solution

(B) In the opposite figure



Touching internally to circles $\overline{AB}$, $\overline{AD}$ are tangents to the larger circle $\overline{AC}$, $\overline{AD}$ are tangents to the smaller circle , If $AM = 20\ cm$, $MC = 12\ cm$, $AB = 3x + 4$, $AD = 5y - 4$, Find $x + y$

Soultion

Draft

محافظة دمياط
مديرية التربية والتعليم

نموذج استرشادي لامتحان إتمام الدراسة بمرحلة التعليم الأساسي
الفصل الدراسي الثاني 2024 \ 2025
المادة : الهندسة المستوية
التاريخ : ..../ ..../ 2025
زمن الإجابة : ساعتان

عدد أوراق الإجابة (6) ورقات بخلاف الغلاف وعلي الطالب مسئولية المراجعة والتأكد من ذلك قبل تسليم الكراسة في نهاية الوقت المخصص للإجابة

رقم السؤال	الدرجة رقما	الدرجة كتابتا	التوقيع	
من 1 إلي 9			المقدر	المراجع
من 10 إلي 11				
من 12 إلي 13				
من 14 إلي 15				
16+ التجميع				
المجموع				

مجموع الدرجات

رقم المراقبة

قص -

نموذج استرشادي لامتحان إتمام الدراسة بمرحلة التعليم الأساسي
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رقم المراقبة

الإدارة التعليمية : ....

اسم الطالب رباعيا : ....

المدرســــــــة : ....

رقم الجلوس : ....

توقيع الملاحظين بصحة بيانات الطالب كما وردت رقم جلوس الطالب ومطابقة عدد أوراق كراسة الإجابة عند استلامها من الطالب

توقيع الملاحظين :

1 - ....

2 - ....

Group 1 : Choose the correct answer :

(1) M , N two touching externally circles , radius of circle M = 3cm , MN = 8cm
Then radius of circle N = ……… cm

(a) 11 (b) 5 (c) 10 (d) 8

……………………………………………………………………………………………

(2) The ratio between measure of central angle : measure of inscribed angle
Subtended same are …….

(a) 1 : 2 (b) 2 : 1 (c) 1 : 1 (d) 1 : 3

……………………………………………………………………………………………

(3) If straight line L ∩ circle M = { A } then $\overleftrightarrow{L}$ is ……. Circle M

(a) axis of symmetry (b) out side

(c) secant (d) tangent

……………………………………………………………………………………………

(4) If $\overline{AB}$ diameter of circle M , $\overleftrightarrow{CD}$ tangent to circle at C then m (∠ ACB) = ……°

(a) 180 (b) 60 (c) 45 (d) 90

……………………………………………………………………………………………

(5) The tangent of circle whose diameter length 8 cm has distance …… cm
from Its Centre

(a) 2 (b) 3 (c) 4 (d) 12

……………………………………………………………………………………………

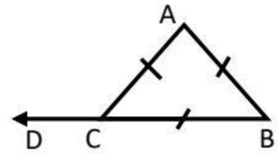
(6) In a parallelogram if the two adjacent sides are equal in the length , then
the Shape is …….

(a) square (b) rhombus (c) rectangle (d) trapezium

……………………………………………………………………………………………

بقية الأسئلة في الصفحة التالية

(7) <u>in the opposite figure</u> :

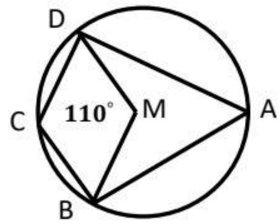


Δ ABC is equilateral then m (∠ ACD) = ...

(a) 45° (b) 60° (c) 120° (d) 135°

....

(8) <u>in the opposite figure</u> :



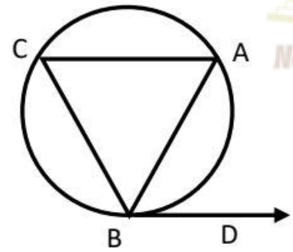
If m (∠ DMB) = 110°

Then m (∠ C) = ...°

(a) 70 (b) 110 (c) 125 (d) 55

....

(9) <u>in the opposite figure</u> :



m (∠ DBC) = 140° then m (∠ A) = ...°

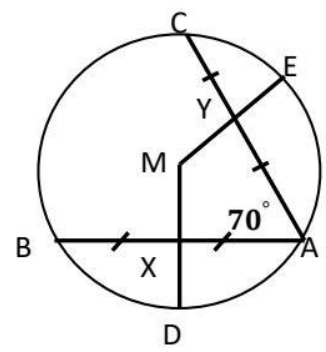
(a) 30 (b) 40 (c) 50 (d) 60

....

بقية الأسئلة في الصفحة التالية

Group 2 : Answer the following :

(10) in the opposite figure :



$\overline{AB}$, and $\overline{AC}$ are two chords equal in length in circle M and X is , the midpoint of $\overline{AB}$, Y is the midpoint of $\overline{AC}$, m (∠ CAB) = 70°

(1) Calculate m (∠ DME)

(2) prove that XD = YE

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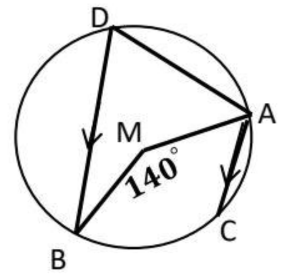
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(11) in the opposite figure :



A circle with Centre M ,

$\overline{AC}$ // $\overline{DB}$ and m (∠ AMB) = 140°

Find : m (∠ CAD)

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بقية الأسئلة في الصفحة التالية

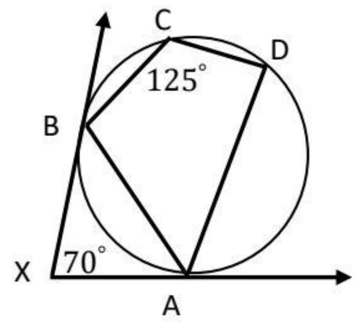
(12) **in the opposite figure :**

$\overrightarrow{XA}$ and $\overrightarrow{XB}$ are two tangents to the circle at A and B

m (∠ AXB) = 70° , m (∠ DCB) = 125°

prove that : (1) $\overrightarrow{AB}$ bisects ∠ DAX

(2) $\overline{AD}$ // $\overrightarrow{XB}$



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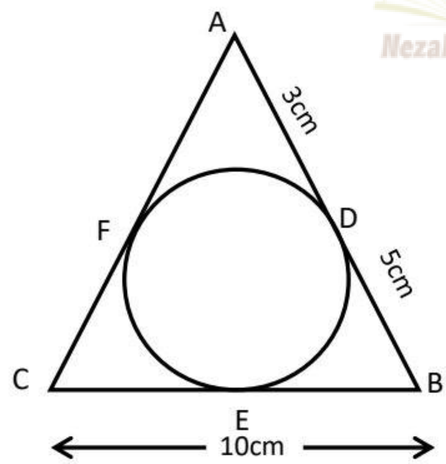
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(13) **in the opposite figure :**

A circle is drawn touches the sides of a triangle ABC , $\overline{AB}$, $\overline{BC}$, $\overline{AC}$ at D , E , F , AD = 3cm DB = 5cm , BC = 10cm

Find the perimeter of △ ABC



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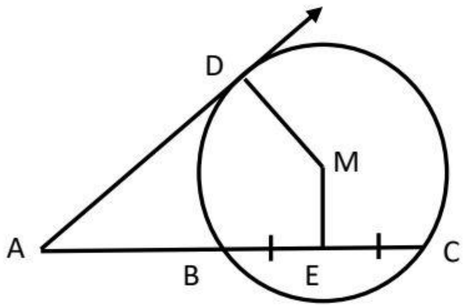
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بقية الأسئلة في الصفحة التالية

(14) <u>in the opposite figure</u> :



$\overleftrightarrow{AD}$ is a tangent to the circle M ,

$\overrightarrow{AC}$ intersects the midpoint of $\overline{BC}$

Prove that : AEMD is a cyclic quadrilateral

....

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....

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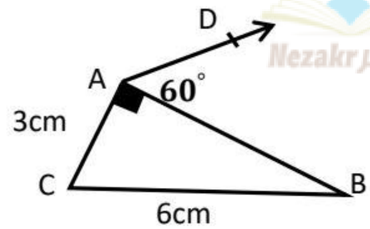
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(15) <u>in the opposite figure</u> :



ABC right angle triangle at A

AC = 3 cm , BC = 6 cm , m (∠ BAD) = 60°

Prove that :

$\overrightarrow{AD}$ is a tangent to the circle passing through the vertices of the triangle ABC

....

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بقية الأسئلة في الصفحة التالية

(16) A and B are two points where AB = 6cm

Draw a circle of radius length 5cm and passes through the two points A and B

Find : the number of circles can be drawn

انتهت الأسئلة

حمل الآن

مجانا وحصريا

امتحانات رقم (3)

الترم الثانى

Sharkia Governorate. Subject: Geometry Bank of questions

General guidance of mathematics 2024 – 2025 Time: 2 hours

First Model

<u>First group</u>: choose the correct answer from the given answers:

① M and N are two circle touching externally their radii lengths are 7 cm, 3 cm then MN = ………… cm

A) 4 B) 12 C) 6 D) 10

② ABC is a right – angled triangle at B, the lengths of sides of the right angle are 6 cm, 8 cm; then the area of the circumcircle of the triangle ABC = ……………π cm^2

A) 36 B) 64 C) 25 D) 100

③ ABCD is cyclic quadrilateral in which: $m(\hat{A}) = 110^\circ$ *then* $m(\hat{C})$ = …

A) 70° B) 250° C) 80° D) 110°

④ A parallelogram with the lengths of two adjacent sides of 7 cm, 5 cm and the greatest height is 6 cm the its surface area = ………… cm^2

A) 35 B) 42 C) 30 D) 18

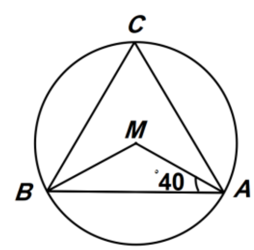
⑤ The measure of the inscribed angle is equal to ……… the measure of the central angle subtended by the same arc.

A) $\frac{1}{2}$ B) 2 C) $\frac{1}{3}$ D) 3

⑥ A circle M has circumference of 12 π *cm* and the point A is in it's plan if MA = 5 cm then the point A lies ……… the circle.

A) *outside* B) *inside* C) *on* D) *on the center*

⑦ <u>in the opposite figure:</u> $m(M\hat{A}B) = 40^\circ$ then $m(\hat{C})$ = ……………



A) 80° B) 100 C) 50° D) 40°

⑧ Number of circles passing through the terminals of a line segment = …

A) 1 B) 0 C) 2 D) *infinit number*

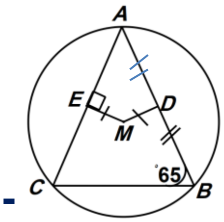
⑨ The radius drawn from the point of tangency of the circle .... to the tangent

A) *paralle* B) *intersect* C) *perpendcular* D) *longer than*

Second group: answer all the following questions:

① **In the opposite figure:** D is the midpoint of $\overline{AB}$, $\overline{ME} \perp \overline{AC}$

MD = ME, $m(\hat{B}) = 65°$, Find , $m(\hat{A})$

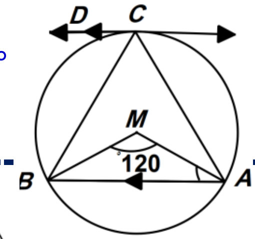


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② **In the opposite figure:**

a circle M, $\overleftrightarrow{CD}$ is tangent at C , $\overleftrightarrow{CD} // \overline{AB}$, $m(A\hat{M}B) = 120°$

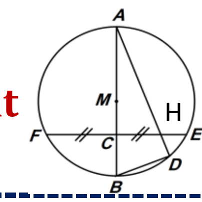
prove that Δ ABC is equilateral triangle.



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③ **In the opposite figure:**

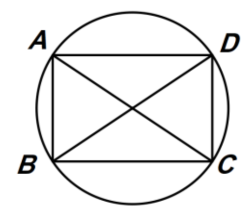
A circle M, $\overline{AB}$ is a diameter on it, C is midpoint of $\overline{EF}$ prove that HDBC is cyclic quadrilateral.



---

④ **In the opposite figure:**

ABCD is quadrilateral inscribed at circle where: AC = BD, AB = $(3x - 5)cm$, CD = $(x + 3)cm$ find with proof the length of $\overline{AB}$

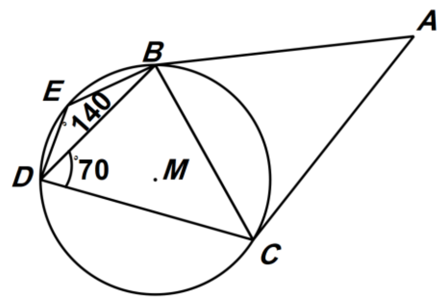


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⑤ **In the opposite figure:**

$\overline{AB}$ *and* $\overline{AC}$ are two tangent line segments to the circle M at B and C, $m(\hat{E}) = 140°$, $m(B\hat{D}C) = 70°$ ① find $m(\hat{A})$

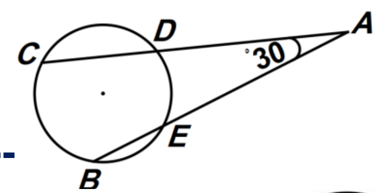
② prove that $\overline{CD}$ is tangent to the circle Passing through the points A, B, C



---

⑥ **In the opposite figure:**

$m(\hat{A}) = 30°, m(\widehat{BC}) = 100°$ Find $m(\widehat{DE})$



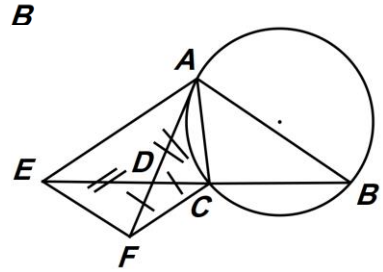
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⑦ **in the opposite figure:**

$\overline{AD}$ tangent to the circle at A, AD = DE, CD = DF

prove that ① ACFE is a cyclic quadrilateral

② $\overline{AB} // \overline{FE}$



Sharkia Governorate. Subject: Geometry Bank of questions

General guidance of mathematics 2024 – 2025 Time: 2 hours

Model (2)

First group: choose the correct answer from the given answers:

① We can draw a circle passing through vertices of ……………

A) *rhombus* B) *rectongle* C) *trapium* D) *parallelogram*

② A circle with diameter length 10 cm, the straight line L is 5 cm long from its canter then L is ……………

A) *tangent to the circle* B) *a secant to the circle*
C) *outsid the circle* D) *diameter to the circle*

③ Number of common tangents of two externally tangent circle is ……

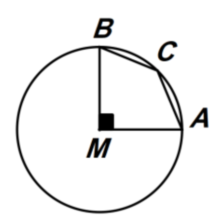
A) 0 B) 1 C) 2 D) 3

④ If M and N are two externally tangent circles, the length of their radii is 2 cm, 4 cm respectively, then the area of the circle whose diameter is $\overline{MN}$ = …………… cm^2

A) 36π B) 9π C) 16π D) 4π

⑤ in the opposite figure:

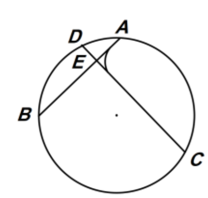
A circle M; If $\overline{AM} \perp \overline{MB}$ then $m\left(A\hat{C}B\right)$ = ………….



A) 45° B) 90° C) 135° D) 100°

⑥ in the opposite figure:

If $m\left(\widehat{AC}\right) = 120^\circ, m\left(\widehat{BD}\right) = 100^\circ$ *then* $m\left(A\hat{E}C\right)$ = ……

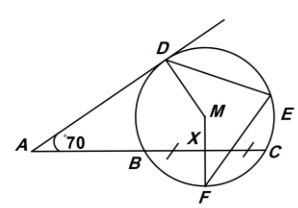


A) 110° B) 55° C) 70° D) 100°

⑦ in the opposite figure:

x is the midpoint of $\overline{BC}$, $\overline{AD}$ is tangent at D

$m\left(\hat{A}\right) = 70^\circ$ *then* $m\left(D\hat{E}F\right)$ = ………



A) 70° B) 110° C) 55° D) 35°

⑧ Number of common tangents of two distant circles = ……………

A) 4 B) 3 C) 2 D) 1

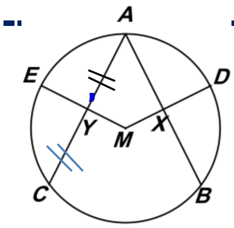
⑨ A rhombus the length of its diagonals 8 cm, 6 cm then it's area = … cm^2

A) 48 B) 14 C) 24 D) 12

Second group: answer all the following questions:

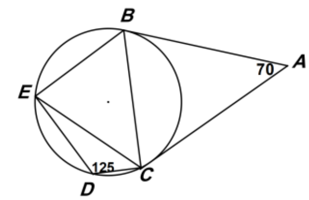
① **In the opposite figure:**

$\overline{AB}$, $\overline{AC}$ is two chords equal in length in the circle M, X is midpoint of $\overline{AB}$, y is midpoint of $\overline{AC}$ prove *that $xD = yE$*



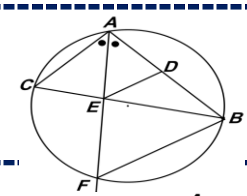
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② $\overline{AB}, \overline{AC}$ are two tangent – segments to the circle M at B and C, $m(\hat{A}) = 70^\circ$, $m(C\hat{D}E) = 125^\circ$ *prove that* $\overrightarrow{BC}$ *bisects* $(A\hat{B}E)$



---

③ **In the opposite figure:** AD = AC, $\overline{AE}$ bisects $(B\hat{A}C)$ prove that DBFE is cyclic quadrilateral

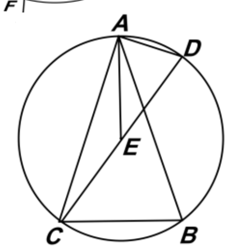


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④ **In the opposite figure:**

A circumcircle of equatorial triangle $D \in \widehat{AB}, E \in \overline{DC}$ *where* $AD = DE$ prove that:

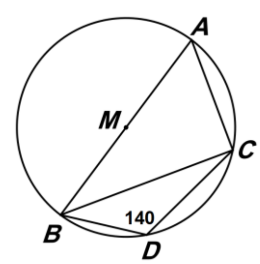
① Δ ADE is equlatral triangle ② $m(D\hat{A}B) = m(E\hat{D}C)$



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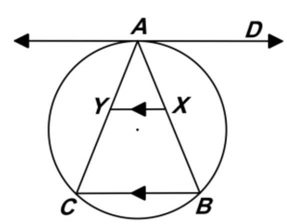
⑤ **In the opposite figure:**

$\overline{AB}$ is a diameter in a circle M, $m(\widehat{BD}) = m(\widehat{CD})$, $m(B\hat{D}c) = 140^\circ$ Find: ① $m(A\hat{B}C)$ ② $m(\widehat{ABD})$



⑥ **In the opposite figure:**

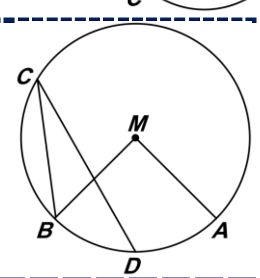
A circumcircle of triangle ABC, $\overleftrightarrow{AD}$ tangent at A, $x \in \overline{AB}, y \in \overline{AC}$ *where* $\overline{xy} // \overline{BC}$ prove that $\overrightarrow{AD}$ is tangent to the circle passing through the points A, x, y



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⑦ **In the opposite figure:**

In a circle M, D is midpoint of $(\widehat{AB})$, $m(D\hat{C}B) = 25^\circ$ *find* $m(A\hat{M}B)$



Sharkia Governorate. **Subject: Geometry** **Bank of questions**

General guidance of mathematics **2024 – 2025** **Time: 2 hours**

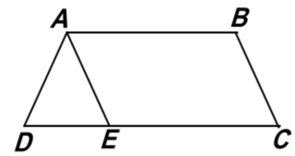
Model (3)

First group: choose the correct answer from the given answers:

① M, N are two circles touching internally their radii lengths 7 cm, 3 cm then MN = ……………

A) 8 B) 4 C) 2 D) 10

② in the opposite figure:



If: ABCD is cyclic quadrilateral, AE = AD, $m\left(E\hat{A}D\right) = 50^{\circ}$ then $m\left(\hat{B}\right)$ = ……………

A) 115° B) 65° C) 130° D) 105°

③ If AB = 6 cm then the number of circles passing through the points A and its radius length 6 cm equals ……………

A) 0 B) 1 C) 2 D) 6

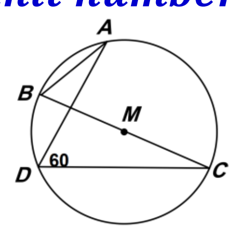
④ The length of the arc opposite to central angle of measure 120° in a circle whose diameter length is 42 cm equals …………… $(\pi = \frac{22}{7})$

A) 28 B) 22 C) 21 D) 44

⑤ Number of axes of symmetry for semicircle is ……………

A) 0 B) 1 C) 2 D) $infinit\ number$

⑥ in the opposite figure:



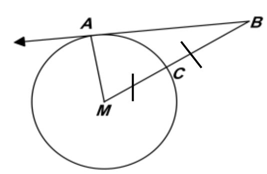
$\overline{BC}$ is diameter in a circle M, $m\left(\hat{D}\right) = 60^{\circ}, \overline{AB} = 5cm$ then the area of the circle M = ………… πcm^2

A) 25 B) 12 C) 100 D) 49

⑦ The ratio between the inscribed angle: the central angle subtends the same are equal ……………

A) 2: 1 B) 1: 3 C) 1: 1 D) 2: 4

⑧ in the opposite figure:



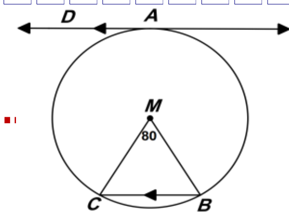
$\overleftarrow{AB}$ is tangent to the circle M at Aand C is midpoint of $\overline{BM}$ then $m\left(\widehat{AC}\right)$ = ...

A) 60° B) 30° C) 45° D) 90°

⑨ **in the opposite figure:**

$\overleftrightarrow{AD}$ is tangent, $\overline{AD} \,//\, \overline{BC}, m\left(B\hat{M}c\right) = 80^\circ$ then $m\left(\widehat{AB}\right)$ = ….

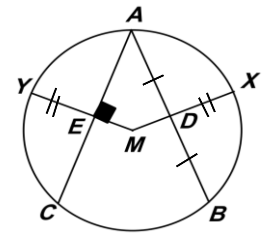
A) 80° B) 160° C) 140° D) 100°



Second group: answer all the following questions:

① **In the opposite figure:**

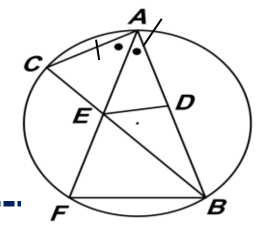
a circle M, D is the midpoint of $\overline{AB}$, $\overline{ME} \perp \overline{AC}, Dx = Ey$ prove that AB = AC



② **In the opposite figure:**

AD = AC, $\overrightarrow{AF}$ $bisects\ \left(B\hat{A}C\right)$

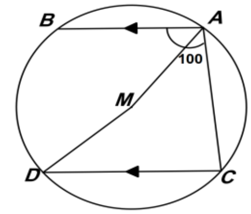
prove that DBFE is cyclic quadrilateral



---

③ A circle M, $\overline{AB} \,//\, \overline{CD}, m\left(C\hat{A}B\right) = 100^\circ$

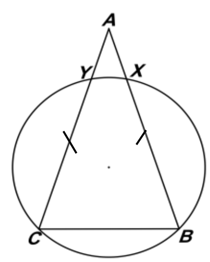
Find $m\left(A\hat{m}D\right)$



④ **In the opposite figure:**

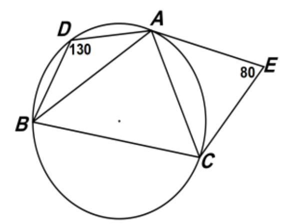
$\overline{Bx}$, $\overline{Cy}$ two chords equal in length in a circle, $\overleftarrow{Bx} \cap \overleftarrow{Cy} = \{A\}$

prove that $Ax = Ay$



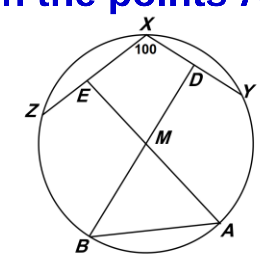
⑤ $\overline{EA}, \overline{EC}$ are two tangent segments to a circle at A and C respectively $, m\left(A\hat{E}C\right) = 80^\circ$ $, m\left(A\hat{D}B\right) = 130^\circ$ prove that: ① AB = AC

② $\overline{AB}$ is tangent segment to the circle passing through the points A, C,



⑥ **In the opposite figure:**

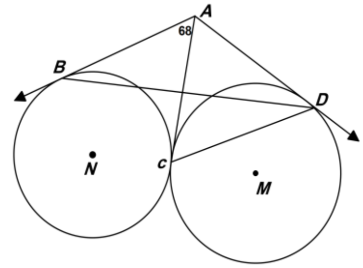
A circle M, $m\left(y\hat{x}z\right) = 100^\circ$, D is midpoint of $\overline{xy}$, E is midpoint of $\overline{xz}$ prove that AB > r where (r is radius of the circle M)



⑦ **In the opposite figure:**

externally tangent circles at C, $\overline{AC}$ is a common tangent, $\overleftrightarrow{AD}$ tangent to circle M at D, $\overleftrightarrow{AB}$ *is* tangent to circle N at B, $m\left(B\hat{A}C\right) = 68^\circ$ prove that

① AB = AD ② Find $m\left(B\hat{D}C\right)$



Model (4)

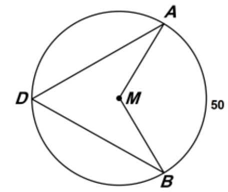
First group: choose the correct answer from the given answers:

① the inscribed angle drawn in a semicircle is ………… angle.

A) *a cute* B) *obtuse* C) *straight* D) *right*

② **in the opposite figure:**

A circle M if $m\left(\widehat{AB}\right) = 50^{\circ}$ *then* $m\left(A\hat{D}B\right)$ = ………………

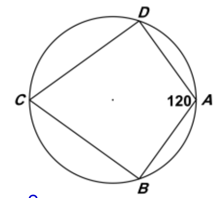


A) 25° B)50° C) 100° D) 150°

③ the number of axes of symmetry of any circle = ………….

A) 0 B) 1 C) 2 D) *infinit number*

④ **in the opposite figure:**



If $m\left(\hat{A}\right) = 120^{\circ}$, *then* $m\left(\hat{C}\right)$ = ……………

A) 60° B) 90° C) 120° D) 180°

⑤ A line (L) is a tangent to the circle with, diameter 8 cm, then L is at …………. cm from its center.

A)3 B) 4 C) 6 D) 8

⑥ If the surface of the circle M ∩ the surface of the circle N = $\{A\}$,the radius length of one of them =3 cm and MN = 8cm ,then the radius length of the other circle = ……… cm

A) 5 B) 6 C) 11 D) 16

⑦ If the quadrilateral is cyclic, then each two opposite angles are … angle

A) *complmenty* B) *supplementry* C) *equal in measure* D) *right*

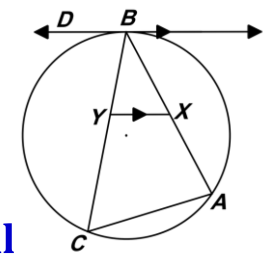
⑧ If $C \in$ the axis of symmetry of $\overline{AB}$ *then* $\overline{AC}$ …………… $\overline{CB}$

A) $=$ B) $//$ C) $\perp$ D) $\equiv$

⑨ the area of square whose side length = 9 cm is …………. cm^2

A) 3 B) 9 C) 18 D) 81

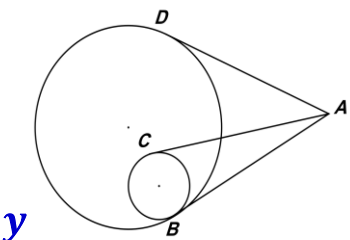
Second group: answer all the following questions:



① **In the opposite figure:**

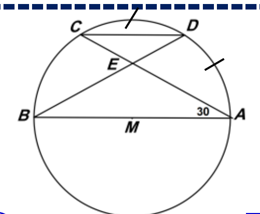
a circumcircle of a triangle ABC where $\overleftrightarrow{BD}$ is tangent to the circle at B, $x \in \overline{AB}$, $y \in \overline{BC}, \overline{xy} // \overline{BD}$ prove that $Axyc$ is cyclic quadrilateral

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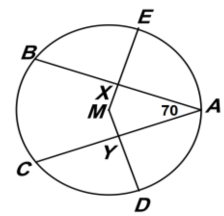
② Two internally tangent circles at B, $\overleftarrow{AB}$ common tangent, $\overleftarrow{AC}$ is a tangent to the smaller circle, $\overrightarrow{AD}$ is tangent to the large circle, AC = 15cm, AB = $(2x-3)cm, AD = (y-2)cm$ Find each of x and y

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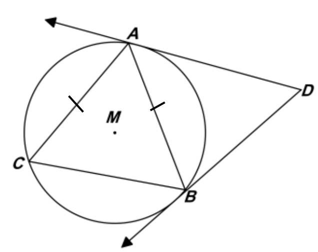
③ **In the opposite figure:**

$\overleftarrow{AB}$ is diameter in a circle M, C ∈ the circle, $m\left(C\hat{A}B\right) = 30^{\circ}$, D is midpoint of $\left(\widehat{Ac}\right)$, $\overline{DB} \cap \overline{AC} = \{E\}$ ① Find $m\left(B\hat{D}C\right), m\left(\widehat{AD}\right)$ ② prove that $\overline{AB} // \overline{CD}$



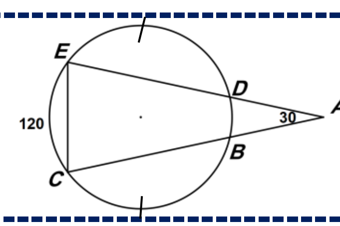
④ **In the opposite figure:**

$\overline{AB}$, $\overline{AC}$ are two equal chords in a circle M, x is midpoint of $\overline{AB}$, y is midpoint of $\overline{AC}$, $m\left(C\hat{A}B\right) = 70^{\circ}$ ① Find $m\left(D\hat{M}E\right)$ ② Prove that $xE = yD$



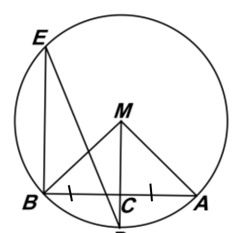
⑤ **In the opposite figure:**

$\overrightarrow{AD}$ *and* $\overrightarrow{DB}$ are two tangent segments of the circle M, AB = AC, prove that $\overline{AC}$ is a tangent to the circumcircle to the triangle ABD



⑥ $m\left(\hat{A}\right) = 30^{\circ}, m\left(\widehat{EC}\right) = 120^{\circ}, m\left(\widehat{BC}\right) = m\left(\widehat{DE}\right)$

① Find $m\left(\widehat{BD}\right)$ ② Prove that AB = AD



⑦ **In the opposite figure:**

$\overrightarrow{MC} \cap$ the circle $M = \{D\}, m\left(M\hat{A}B\right) = 20^{\circ}$

Find $m\left(B\hat{E}D\right), m\left(A\hat{D}B\right)$

General guidance of Mathematics. **Model (5)** **Time: 2 hours**

2024 – 2025

First group: choose the correct answer from the given answers:

① the measure of the arc which represent semicircle = ……………

A) 360° B) 180° C) 120° D) 90°

② the number of common tangents of two externally tangent circles = …

A) 0 B) 1 C) 2 D) 3

③ the measure of inscribed angle drawn in a semicircle = …………

A) 45° B) 90° C) 120° D) 180°

④ the angle of tangency is an angle contained between ……………

A) *two chords* B) *two tangents*

C) *a chorded and tangat* D) *a chord and diameter*

⑤ ABCD is cyclic quadrilateral where $m(\hat{A}) = 60^\circ$ *then* $m(\hat{C})$ = ………

A) 60° B) 30° C) 90° D) 120°

⑥ Two circles M, N tangent internally their radii lengths = 5cm, 9cm then MN = …………… cm

A) 14 B) 4 C) 5 D) 9

⑦ If $\overline{AC}$ is a diameter in a circle M then $m(\widehat{AC})$ = ……………

A) 90° B) 180° C) 120° D) 360°

⑧ the number of altitudes of isosceles triangle = ……………

A) 0 B) 1 C) 2 D) 3

⑨ If $m(\hat{A}) = 110^\circ$, then reflected $m(\hat{A})$ = ……………

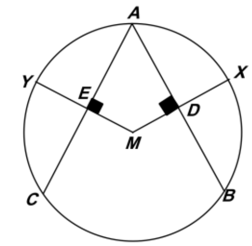
A) 70° B) 110° C) 180° D) 250°

Second group: answer all the following questions:

① **in the opposite figure:**

AB = AC, $\overline{MD} \perp \overline{AB}, \overline{ME} \perp \overline{AC}$

Prove that $xD = Ey$



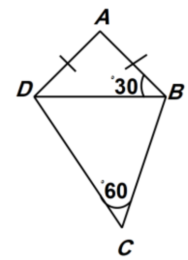
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② **In the opposite figure:**

ABCD is quadrilateral where AB = AD,

$m\left(A\hat{B}D\right) = 30^\circ, m\left(\hat{C}\right) = 60^\circ$

Prove that ABCD is cyclic quadrilateral

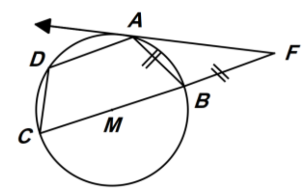


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③ a circle M, $\overline{BC}$ is a diameter of it and

$F \in \overrightarrow{BC}, m\left(\hat{F}\right) = 30^\circ, \overrightarrow{FA}$ is tangent at A

$, m\left(\hat{D}\right) = x^\circ, m\left(\widehat{ABC}\right) = (y-5)^\circ$ $Find\ x + y$

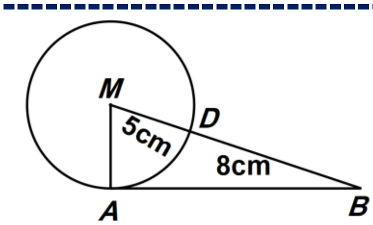


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④ $\overline{AB}$ is a tangent to the circle M

Where MD = 5cm, DB = 8cm

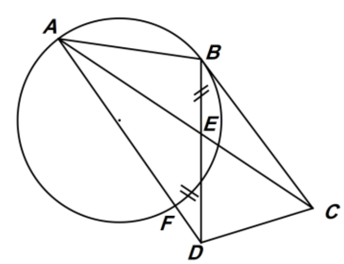
Find the perimeter of Δ ABC



---

⑤ **In the opposite figure:**

$\overline{BC}$ is a tangent to the circle at B , E is midpoint of the arc $\left(\widehat{BF}\right)$ prove that the figure ABCD is cyclic quadrilateral

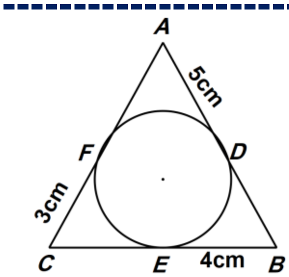


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⑥ **In the opposite figure:**

ABC is a triangle drawn outside circle touch it's sides $\overline{AB}, \overline{BC}, \overline{AC}$ at D, E, F respectively

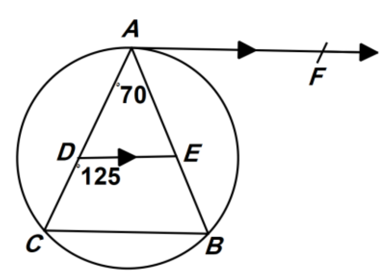
Find the perimeter of Δ ABC



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⑦ $\overrightarrow{AF}$ is a tangent to the circle at A

$\overrightarrow{AF} // \overline{DE}$ Prove that DEBC is cyclic quadrilateral



General guidance of Mathematics. **Model (6)** **Time: 2 hours**

2024 – 2025

<u>First group</u>: choose the correct answer from the given answers:

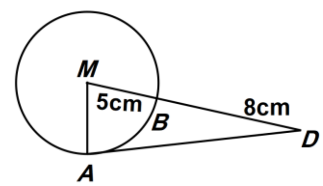
① a circle M with diameter length 10cm, A ∈ the surface of the circle then MA ∈ ……………

A) $[0,10]$ B) $[0,5]$ C) $[0,5[$ D) $[0,10[$

② the measure of the inscribed angle drawn in a quarter circle is ……

A) 90° B) 45° C) 135° D) 270°

③ <u>In the opposite figure:</u>



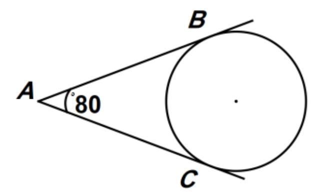
$\overline{AD}$ is tangent to the circle at A, BD = 8cm, MB = 5cm then AD = ……… cm

A) 8 B) 13 C) 5 D) 12

④ Number of circles pass through three collinear points = …………

A) 0 B) 1 C) 3 D) $infinit\ number$

⑤ <u>In the opposite figure:</u>



$\overrightarrow{AB}, \overline{AC}$ are two tangents, $m\left(\hat{A}\right) = 80^\circ$ then $m\left(\widehat{BC}\right)$ = ……………

A) 80° B) 314° C) 100° D) 50°

⑥ the longest chord in the circle called …………

A) $tangent$ B) $seacint$ C) $radius$ D) $diameter$

⑦ a circle with radius length 12 cm then the length, of the arc corresponding to a central angle of measure 120° = ………… π

A) 10 B) 8 C) 16 D) 20

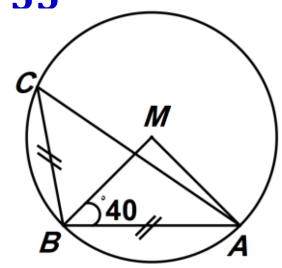
⑧ the length of the side opposite to the angle of measure 30° in the right – angled triangle = ………… the hypotenuse

A) $half$ B) $quarter$ C) $twico$ D) $equal$

⑨ ABCD is a cyclic quadrilateral where AB = AD, $m\left(\hat{C}\right) = 70^\circ$

Then $m\left(A\hat{B}D\right)$ = ...

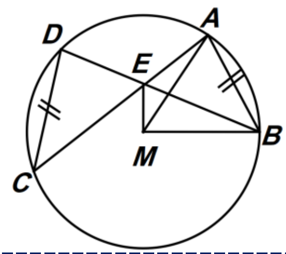
A) 70° B) 45° C) 110° D) 55°



Second group: answer all the following questions:

① **in the opposite figure:**

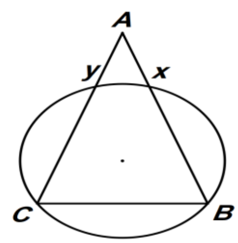
a circle M, $m\left(A\hat{B}M\right) = 40^\circ$, AB = BC, Find $m\left(B\hat{A}C\right)$



② **In the opposite figure:**

AB = DC ① prove that ABME is cyclic quadrilateral

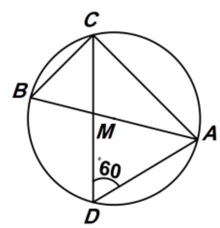
② if $M\left(A\hat{M}E\right) = 30^\circ$ $find\ m\left(E\hat{C}D\right)$



③ **In the opposite figure:**

$m\left(\hat{B}\right) = m\left(\hat{C}\right)$

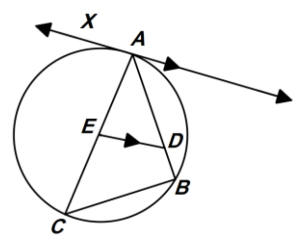
prove that $Ax = Ay$



④ **In the opposite figure:**

$\overline{AB}$ is diameter, $m\left(A\hat{D}C\right) = 60^\circ, BC = 7cm$

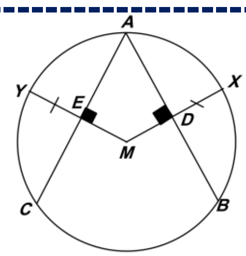
Find the area of circle M



⑤ **In the opposite figure:**

$\overleftrightarrow{Ax}$ is a tangent to the circle a, $\overline{DE} \,//\, \overleftrightarrow{Ax}$

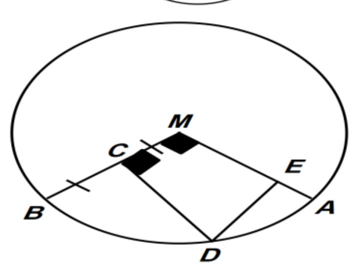
prove that DBCE is cyclic quadrilateral



⑥ **In the opposite figure:**

a circle M, $\overline{MD} \perp AB, \overline{ME} \perp \overline{AC}$

$xD = yE$ prove that AB = AC



⑦ **in the opposite figure:**

MEDC is rectangle where MC = CB

Find $m\left(\widehat{DB}\right)$

Model (7)

First group: choose the correct answer from the given answers:

① If the area of a square = 50 cm^2, then the area of the circle passing through its vertices = ………… πcm^2

A) 100 B) 50 C) 75 D) 25

② We can draw a circle passing through the vertices of …………

A) $rhombus$ B) $rectangle$ C) $trapezium$ D) $paralle\ logram$

③ If M and N are two circles with radii length 5cm, 7cm and intersecting then MN ∈ ……………………

A) $[5,7]$ B) $]2,12[$ C) $[2,12]$ D) $[3,11]$

④ ABCD is a cyclic quadrilateral, where $m\left(\hat{A}\right) = (5x)^\circ, m\left(\hat{C}\right) = (4x)^\circ$ then x = ………………… °

A) 20 B) 40 C) 100 D) 80

⑤ the center of the inscribed circle of triangle is intersection of its ………

A) $medians$ B) $altiludes$ C) $axis\ of\ symmetry\ of\ it's\ sides$ D) $the\ bisectors\ of\ its\ interior\ angels$

⑥ The inscribed angle drawn in a semicircle is ……… angle

A) $a\ cute$ B) $obtuse$ C) $straight$ D) $right$

⑦ the center of the circle which passing through two known points A and B ∈ …………………

A) $the\ perpondeular\ to\ \overline{AB}$ B) $midpoint\ of\ \overline{AB}$ C) $axis\ of\ symmetry\ of\ \overline{AB}$ D) $the\ parelle\ lines\ to\ \overline{AB}$

⑧ The two straight lines drown from the ends of a diameter a circle are …

A) $are\ equal$ B) $congmant$ C) $paralle$ D) $interseiting$

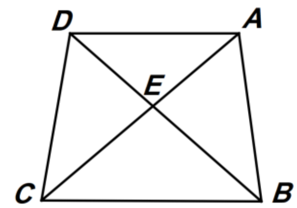
⑨ the measure of the angle of tangency=……… the measure of the central angle subtends the same arc

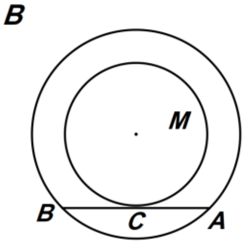
A) $twice$ B) $third$ C) $half$ D) $quarter$

Second group: answer all the following questions:

① **in the opposite figure:**

$\overline{AC} \perp \overline{BD}$, AE = 4cm, CE = 6cm, BE = 3cm, ED = 8cm prove that ABCD is cyclic quadrilateral





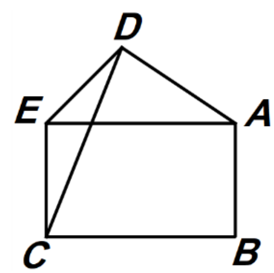
② **In the opposite figure:**

$\overline{AB}$ touch the smaller circle at C if AB = 14cm Find the area of the region between the two circles

③ Using the geometric tools Draw $\overline{AB}$ with length 7cm, then Draw a circle pass through the points A and B with radius length 4cm

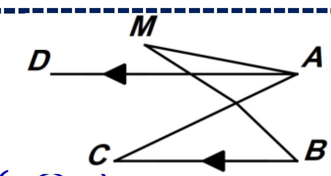
④ **In the opposite figure:**

ABCD, ABCE are two cyclic quadrilateral prove that ACED is cyclic quadrilateral



⑤ **In the opposite figure:**

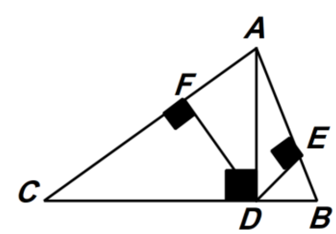
M is center of a circle $\overline{AD} // \overline{BC}, m\left(\widehat{CD}\right) = 70°$ the points A ,B,C,D on the circle M Find $m\left(\angle AMB\right), m\left(\angle ACB\right)$



⑥ **In the opposite figure:**

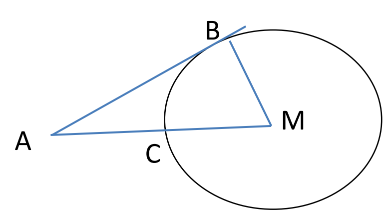
$\overline{AD} \perp \overline{BC}, \overline{DE} \perp \overline{AB}, \overline{DF} \perp \overline{AC}$

Prove that EBCF is cyclic quadrilateral



⑦ **in the opposite figure:**

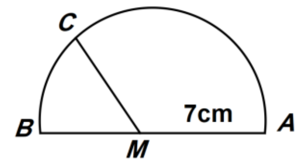
$\overline{AB}$ is a tangent, C is midpoint of $\overline{MA}$ Find $m\left(\widehat{BC}\right)$



General guidance of Mathematics. | Model (8) | Time: 2 hours | 2024 – 2025

First group: choose the correct answer from the given answers:

① the perimeter of the opposite figure = ………… cm



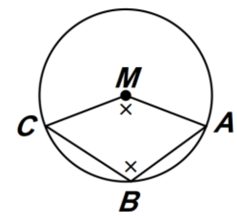
A) 22 B) 43 C) 36 D) $2\pi r$

② the measure of the inscribed angle drawn on semicircle …… the measure of the central angle drawn in quarter circle

A) $<$ B) $>$ C) $=$ D) *other*

③ in the opposite figure:

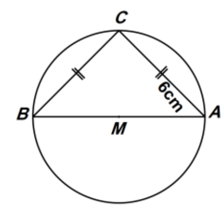
A circle M, $m(\hat{B}) = m(A\hat{m}C)$, then $m(\hat{B})$ = …………… °



A) 120 B) 150 C) 60 D) 90

④ in the opposite figure:

$\overline{AC}$=6cm then The area of the circle M = ……… cm^2



A) 9π B) 18π C) 36π D) 64π

⑤ ABCD is cyclic quadrilateral $\cos A$ = …………

A) $\cos C$ B) $-\cos C$ C) $\sin C$ D) $-\sin C$

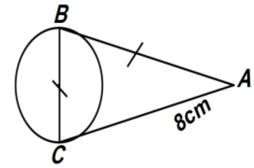
⑥ $\overline{MA}, \overline{MB}$ are two perpendicular radii in a circle M, the area of Δ AMB = 8 cm^2, then the radius length of the circle = …………… cm

A) 4 B) 8 C) 16 D) $8\sqrt{3}$

⑦ the two-tangent drawn from the ends of a diameter has the two equations $x - 2y = 10, mx + 6y = 7$ *then* m = ………

A) 3 B) -3 C) 9 D) 6

⑧ in the opposite figure the area of $\Delta\ ABC$ = ……………

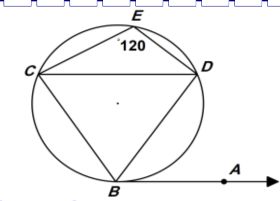


A) $16\sqrt{3}$ B) $64\sqrt{3}$ C) $8\sqrt{3}$ D) $24\sqrt{3}$

⑨ the inscribed angle subtends an arc larger than the semicircle is …

A) *a cute* B) *right* C) *obtuse* D) *straight*

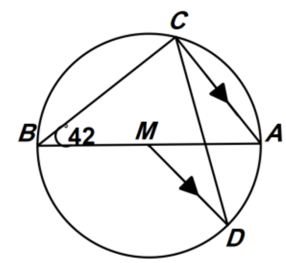
Second group: answer all the following questions:



① **In the opposite figure:**

$m\left(B\widehat{D}C\right) = m\left(A\widehat{B}D\right), m\left(\widehat{E}\right) = 120^{\circ}$

the area of the circle = $49\,\pi\ cm^2$ Find the perimeter of Δ BCD



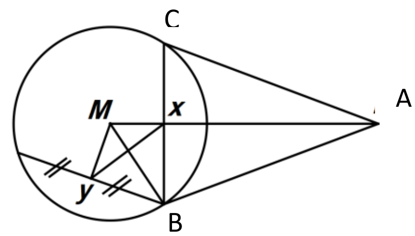
② **In the opposite figure:**

$\overline{AB}$ is a diameter, $\overline{AC} \,//\, \overline{MD}$

$m\left(\widehat{B}\right) = 42^{\circ}$, Find $m\left(A\widehat{C}D\right)$, $and\ if$

$m\left(\widehat{BD}\right) = (5x + 6)cm$ Find the value of x

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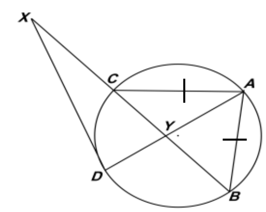


③ **In the opposite figure:**

$\overline{AB}$, $\overline{AC}$ two tangent segment in circle M at B, C

$d\ m\left(x\widehat{y}m\right) = 35^{\circ}$ ① prove that $x\ By\ M$ is cyclic

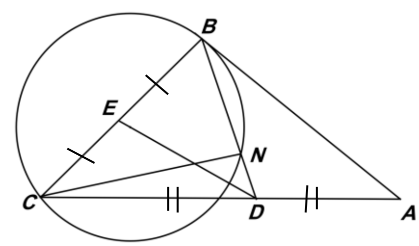
② Find $m\left(B\widehat{A}C\right)$



④ **In the opposite figure:**

AB = AC, $\overline{xD}$ is tangent

prove that $xy = xD$

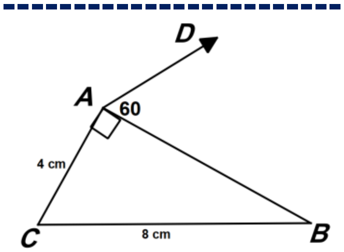


⑤ **In the opposite figure:**

$\overline{AB}$ is tangent to the circle , D is midpoint of $\overline{AC}$, E is midpoint of $\overline{BC}$ prove that

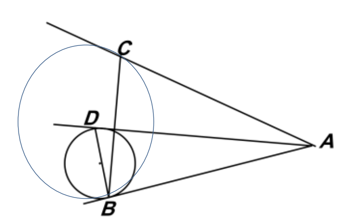
① $\overline{AB} \,//\, \overline{DE}$ ② NDCE is cyclic quadrilateral

---



⑥ **In the opposite figure:**

$prove\ that\ \overleftrightarrow{AD}$ is tangent to the inscribed circle of the Δ ABC



⑦ $\overline{AC}$, $\overline{AB}$, $\overline{AD}$ are tangents, $m\left(C\widehat{B}D\right) = 25^{\circ}$

, $m\left(C\widehat{B}D\right) = 25^{\circ}$, if AD = $(2x - 3)cm, AC = 9cm$

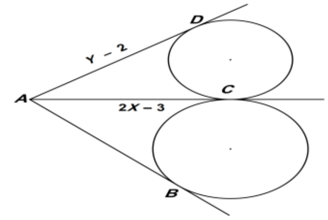
Find the value of x and the length of $\overline{AB}$

General guidance of Mathematics. **Model (9)** **Time: 2 hours**

2024 – 2025

First group: choose the correct answer from the given answers:

① **In the opposite figure:**



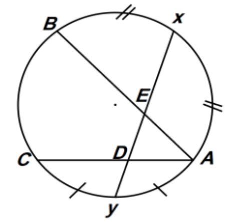
$\overrightarrow{AD}, \overrightarrow{AC}, \overrightarrow{AB}$ are three tangent then $x + y$ = …… cm

A) 7 B) 14 C) 6 D) 12

② The measure of the center angle equal …… of the subtended arc

A) *twice* B) *measure* C) $\frac{1}{2}$ *measure* D) $\frac{1}{4}$ *measure*

③ **In the opposite figure:**

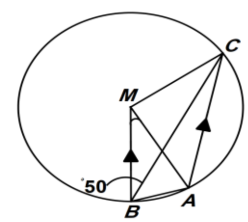


x is midpoint of $(\widehat{AB})$, y is midpoint of $\widehat{AC}$

then AE = ……………………

A) EB B) Ex C) ED D) AD

④ **In the opposite figure:**

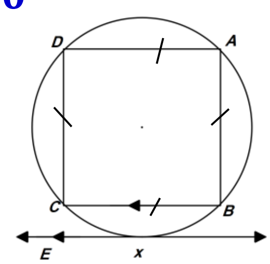


a circle M, $\overline{AC} \,//\, \overline{BM}$, $m\,(A\hat{M}B) = 50^\circ$

then $m\,(\widehat{AC})$ = ………………… °

A) 40 B) 50 C) 80 D) 130

⑤ **In the opposite figure:**



ABCD is square, $\overline{xE}$ is tangent

$\overline{EX} \,//\, \overline{BC}$, then $m\,(\widehat{xB})$ = ………… °

A) 90 B) 135 C) 22.5 D) 45

⑥ A circle can be drawn through vertices of …………

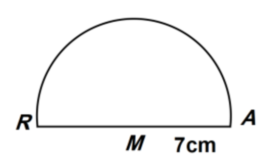
A) *triangle* B) *rhombus* C) *parallelogrom* D) *trapazium*

⑦ If the radius length of a circle = 5 cm, A is a point inside it, MA = $2x - 4cm$ *then* $x \in$ ……………………

A) $]0, 4.5[$ B) $]0. \infty[$ C) $]-\infty, 0[$ D) $[2\,, 4.5[$

⑧ The perimeter of the opposite figure = …….

(where $\pi = \frac{22}{7}$)



A) 44 B) 36 C) 14 D) 22

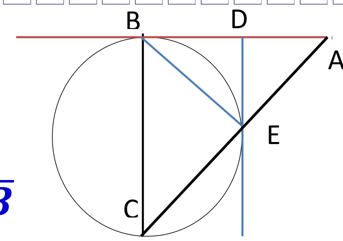
⑨ M, N are two circles with radii 5cm, 4cm then the two circles intersecting if MN ……………… cm

A) 10 B) 1 C) $\in\,]1, 9[$ D) 9

Second group: answer all the following questions:

① **In the opposite figure:**

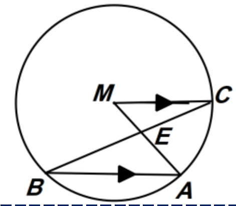
a circle M, $\overrightarrow{DE}, \overrightarrow{DB}$ are two tangent at E and B, $\overline{BC}$ is diameter prove that Dis midpoint of $\overline{AB}$



---

② **In the opposite figure:**

$\overline{AB}$ is a chord in the circle M, $\overline{CM} \,//\, \overline{AB}$, $\overline{BC} \cap \overline{AM} = \{E\}$ prove that BE > AE

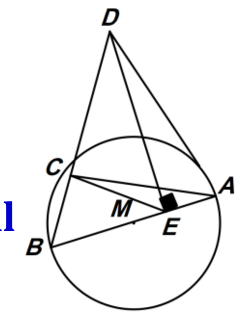


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③ **In the opposite figure:**

$\overline{AB}$ is diameter in the circle M, E ∈ $\overline{AB}, \overrightarrow{ED} \perp \overline{AB}$ where D outside the circle M, $\overline{DB}$ is drawn intersect the circle M at C prove that ① AECD is cyclic quadrilateral

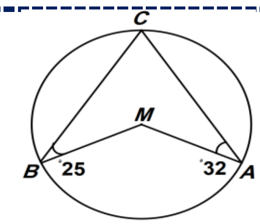
② $m\left(E\hat{D}C\right) = \frac{1}{2} m\left(\widehat{BC}\right)$



---

④ **In the opposite figure:**

$\overline{AC}, \overline{BC}$ are two chard in the circle M, $m\left(C\hat{A}M\right) = 32°, m\left(C\hat{B}M\right) = 25°$ Find $\left(A\hat{M}B\right)$

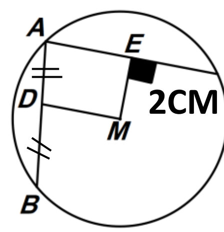


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⑤ **In the opposite figure:**

$\overline{AB}, \overline{AC}$ are two chords in the circle M, $\overline{ME} \perp \overline{AC}$, $ME = 2cm$, D is midpoint of $\overline{AB}$ where $M(4,1)$, A $(2,3)$, $B(2,-1)$ prove that AB=AC

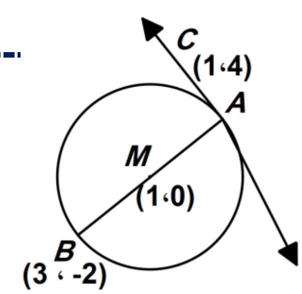
,if MD=(X-1) Find the value of x



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⑥ **In the opposite figure:**

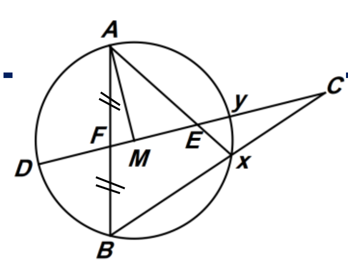
$\overline{AB}$ is a diameter of the circle M where $M(1,0), B(3,-2), \overleftrightarrow{AC}$ is drawn where $\overleftrightarrow{AC} \cap \overline{AB} = \{a\}$ if $C(1,4)$ prove that $\overleftrightarrow{AC}$ is tangent to the circle M at A



---

⑦ **In the opposite figure:**

$\overline{AB}$ is a chord in the circle M, F is midpoint



of $\overline{AB}$, C, y, D $\in \overleftrightarrow{FM}$, $\overline{xA} \cap \overline{yD} = \{E\}$ prove that $CxMA$ is cyclic quadrilateral

General guidance of Mathematics. **Model (10)** **Time: 2 hours** **2024 – 2025**

First group: choose the correct answer from the given answers:

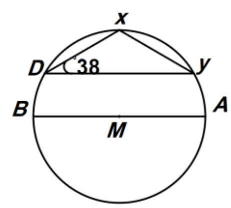
① the center of the interior circle of the triangle is the point of intersection of its ……………

A) $heights$ B) $medians$
C) $angles\ bisecter$ D) $axis\ of\ symmetry\ of\ its\ sids$

② Number of common tangents of two circles touching Externally is

A) 1 B) 2 C) 3 D) 4

③ **In the opposite figure:**



$\overline{AB}$ is diameter in circle M. $xy = 6cm$,
$m(\hat{D}) = 30^{\circ}$ the circumference of the circle M = ……

A) 6π B) 12π C) 20π D) 40π

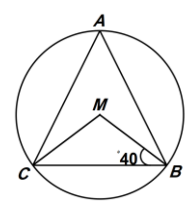
④ The $length\ of\ an\ arc\ from\ a\ circle\ is\ \frac{1}{6}\pi\ r\ cm$ the it opposite to centrol angle of measure = …………… °

A) 30 B) 60 C) 90 D) 120

⑤ the quadrilateral that cannot be circled through its vertices is ………

A) $rectangle$ B) $square$ C) $parallelogram$ D) $isosceles\ trapzium$

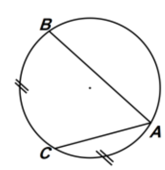
⑥ **In the opposite figure:**



a circle M, $m(M\hat{B}C) = 40^{\circ}$ then $m(\hat{A})$ = ……… °

A) 20 B) 40 C) 50 D) 80

⑦ **in the opposite figure:**



If C is midpoint of $(\widehat{AB})$ than AB ……… 2 AC

A) $>$ B) $<$ C) $=$ D) $\leq$

⑧ If AB = 6cm. then the area of the smallest circle passing through the two point A and B = ………… cm^2

A) 3π B) 6π C) 8π D) 9π

⑨ M, N are two intersecting circles with radii 5cm, 3cm then MN ∈ ……

A) $]0, 2[$ B) $]2, 8[$ C) $]8, \infty[$ D) $]2, \infty[$

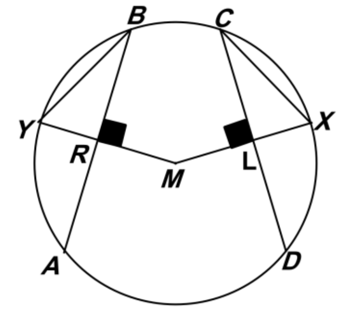
Second group: answer all the following questions:

① **In the opposite figure:**

$\overline{AB}, \overline{CD}$ equal chords in the circle M,

$\overline{Mx} \perp \overline{CD}, \overline{My} \perp \overline{AB}$ prove that ① $xL - yE$

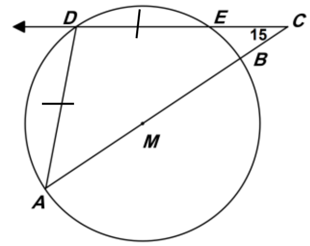
② $m\left(x\hat{C}D\right)\ m\left(y\hat{B}A\right)$



② **In the opposite figure:**

$\overline{AB}$ is a diameter in a circle M

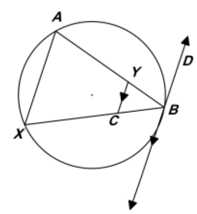
AD = DE, $m\left(\hat{C}\right) = 15^\circ$ Find $m\left(A\hat{D}E\right)$



③ **In the opposite figure:**

$\overrightarrow{BD}$ is tangent to the circle M at B,

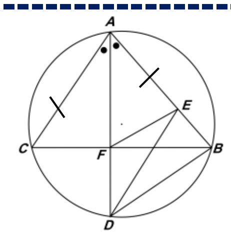
$\overleftrightarrow{BD} \,//\, \overline{Cy}$ prove that $Aycx$ cyclic quadrilateral



④ **In the opposite figure:**

AE = AC, $\overline{AD}$ bisects $\left(B\hat{A}C\right)$ prove that

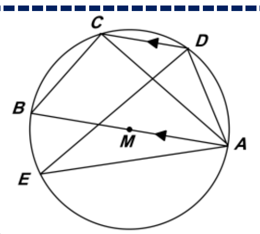
$m\left(D\hat{B}F\right) = m\left(D\hat{E}F\right)$



⑤ **In the opposite figure:**

AB is a diameter in the circle M, $\overline{DC} \,//\, \overline{AB}$

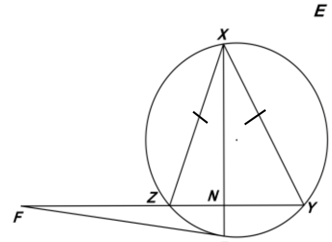
, $m\left(A\hat{B}C\right) = 62^\circ$ Find $m\left(A\hat{E}D\right)$



⑥ **In the opposite figure:**

$xy = xz, \overrightarrow{EF}$ tangent at E

prove that $NF = EF$

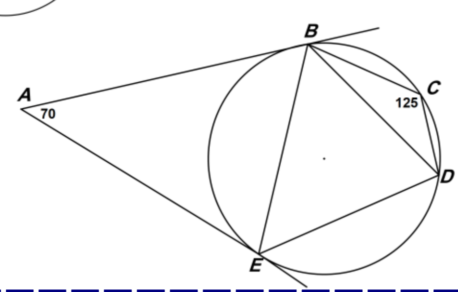


⑦ **In the opposite figure:**

$\overrightarrow{AE}, \overrightarrow{AB}$ are two tangents $m\left(\hat{A}\right) = 70^\circ$

, $m\left(\hat{C}\right) = 125^\circ$ prove that ① DB = BE

② $\overline{AB} \,//\, \overline{ED}$



امتحانات رقم (4)

الترم الثانى

MODEL EXAM NO (7)

[Q1] [A] Choose the correct answer:

(1) A circle of radius 4 cm and its center is origin point, which of the following points not belong to the circle?

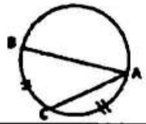
a) $(0, 4)$ b) $(4, 0)$ c) $(0, -4)$ d) $(4, 4)$

(2) If straight line L lies outside circle of diameter 10 cm, and the distance between L and center of circle is X, then $X \in$ ....

a) $[0, 5]$ b) $]0, 5[$ c) $[0, 5[$ d) $]5, \infty[$

(3) In the opposite figure:

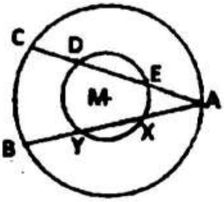
C is midpoint of $\widehat{AB}$, Then AB .... 2 AC



a) $>$ b) $<$ c) $\geq$ d) $=$

[B] In the opposite figure:

Two concentric circles at M, $\overline{AB}$ is chord in greater circle and cut smaller circle at X, Y, $\overline{AC}$ is chord in greater circle cut smaller circle in D, E, if AB = AC

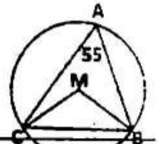


Prove that: DE = XY

[Q2] [A] Choose the correct answer:

(1) In the opposite figure:

$M(\angle A) = 55°$, $m(\angle(MCB) =$ ....°

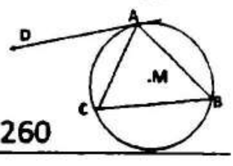


a) 180 b) 90 c) 100 d) 110

(2) In the opposite figure:

$\overrightarrow{AD}$ is tangent to circle M at A,

$m(\angle DAB) = 130°$, Then $m(\angle C) =$ ....°

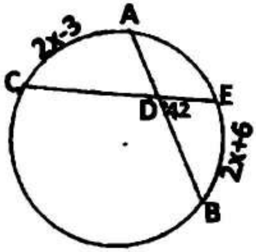


a) 50 b) 65 c) 130 d) 260

(3) We can't draw circle passing through vertices of ....

a) Parallelogram b) Square c) Rectangle d) Isosceles trapezium

[B] In the opposite figure:



$\overline{AB} \cap \overline{EC} = \{D\}$, m(∠EDB) = 42°

M($\widehat{EB}$) = (2 X + 6)°, m ($\widehat{AC}$) = (3 X − 2)°

Find the value of C?

[Q3] [A] Choose the correct answer:

(1) Sum of the interior angles of the cyclic quadrilateral is ....°

a) 90 b) 180 c) 360 d) 720

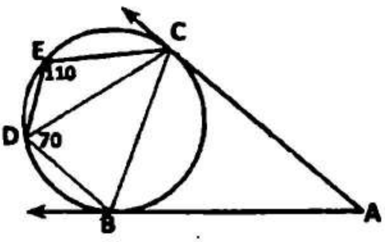
(2) The length of the arc whose opposite to half circle = ...

a) $2\pi r$ b) πr c) $\frac{1}{2}\pi r$ d) $\frac{1}{3}\pi r$

(3) If ABCDEF is a regular hexagon drawn inside a circle, then m ($\widehat{AB}$) = ... °

a) 60 b) 90 c) 180 d) 360

[B] In the opposite figure:



$\overrightarrow{AB}$, $\overrightarrow{AC}$ are two tangents at B, C

m(∠E) = 110°, m(∠BDC) =70°

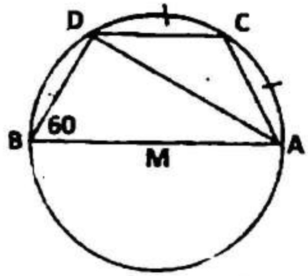
Prove that:

① $\overrightarrow{BC}$ bisects ∠ ABD

② $\overrightarrow{CD}$ is tangent to circle passes through vertices of Δ ABC

---

[4] **[A] In the opposite figure:**



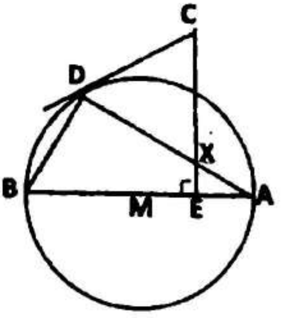
ABCD is cyclic quadrilateral, $\overline{AB}$ is diameter in circle M, m(∠B) = 60°

Length of $\widehat{AC}$ = length of $\widehat{CD}$

Prove that: $\overrightarrow{AD}$ bisects ∠ BAC

[B] XYZL is a Parallelogram, ∠ X is acute angle, F ∈ $\overrightarrow{ZL}$, F ∉ $\overline{ZL}$ where YF = XL. **Prove that** XYLF is cyclic quadrilateral.

[Q5]

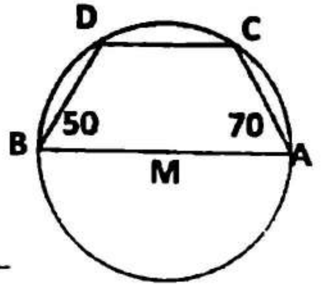


[A] In the opposite figure:

$\overrightarrow{AB}$ is diameter in circle M,

$\overline{CD}$ is tangent to circle D

If $\overline{CE} \perp \overline{AB}$, prove that: CX = CD



[B] In the opposite figure:

$\overline{AB}$ is diameter in circle M, its radius is 5 cm,

m(∠B) = 50°, m(∠A) = 70°,

↬ Find the length of $\overline{CD}$

End of the questions

MODEL EXAM NO (8)

[Q1] A) Choose the correct answer:

(1) If ABCD is square drawn in a circle, then m ($\widehat{AB}$) = ...°

a) 60 b) 90 c) 120 d) 180

(2) Number of common tangent for two touching internally circles is

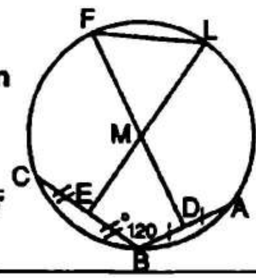
a) 1 b) 2 c) 3 d) Zero

(3) Center of all circles passes through two points A , B lies on ....

a) $\overline{AB}$
b) Axis of $\overline{AB}$
c) Midpoint of $\overline{AB}$
d) Perpendicular on axis of $\overline{AB}$

B): In the opposite figure:

$\overline{AB}$, $\overline{AC}$ are two chords in circle M of radius 7 cm , D, E midpoints of $\overline{AB}$, $\overline{AC}$, m(∠BAC) = 120°, Draw $\overrightarrow{DM}$, $\overrightarrow{EM}$ cut circle in F, L find length of $\overline{LF}$



[Q2] A) Choose the correct answer:

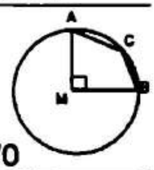
(1) Circle of area X π cm^2, straight line L of distant (X + 1) cm form its center, then L lies .... Circle

a) Outside the b) Secant of c) Tangent of d) Axis of

(2) In the opposite figure:

$\overline{MA} \perp \overline{MB}$,

Then m(∠ACB) = ... °



a) 90 b) 135 c) 110 d) 270

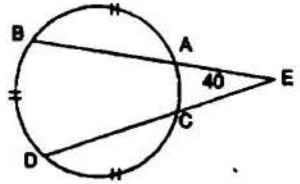
(3) The center of circumcircle of a triangle is intersection point of ....

a) Medians
c) Axes of its sides
b) Altitudes
d) Bisectors of its angles

B): In the opposite figure:

$M(\widehat{AB}) = m(\widehat{DB}) = m(\widehat{DC})$

$M(\angle C) = 40°$, **find** $m(\widehat{AC})$



[Q3]

[A] Choose the correct answer:

(1) Number of symmetric axes of two touching circles externally is...

a) 0 b) 1 c) 2 d) ∞

(2) If point A lies on surface of circle M and length of its diameter is 6 cm, then m ∈ ....

a)]−∞ , 6] b)]−∞ , 3] c) [0 , 3] d)] 3 , ∞ [

(3) ABCD is a quadrilateral inscribed in a circle, m(∠A) = 70°, then m(BAD) = ...°

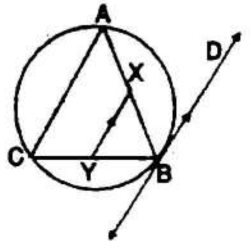
a) 35 b) 55 c) 140 d) 220

[B] In the opposite figure:

ABC is triangle drawn in a circle,

$\overrightarrow{BD}$ is tangent, $\overline{BD} \parallel \overline{XY}$

Prove that: AXYC is cyclic quadrilateral.



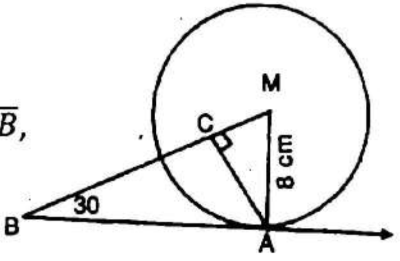
[Q4]

[A] In the opposite figure:

$\overrightarrow{BA}$ is tangent of circle M at A, $\overline{AC} \perp \overline{MB}$,

MA = 8 cm, m (∠B) = 30°

Find the length of $\overline{AB}$, $\overline{AC}$

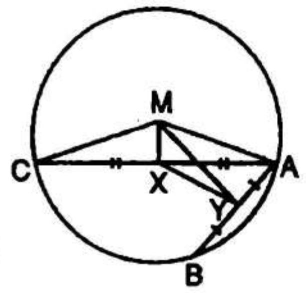


[B] In the opposite figure:

X is midpoint of $\overline{AC}$, Y is midpoint of $\overline{AB}$

① Prove that: m ($\angle$ MYX) = m ($\angle$ MCX)

② $\overline{AM}$ is diameter in circle passes A , Y , X , M

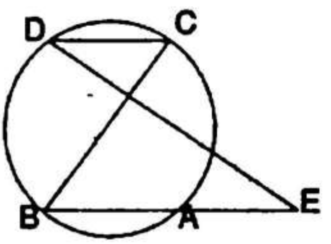


[Q5]

[A] In the opposite figure:

E is a point outside the circle

Prove that: m(E) < m (BCD)



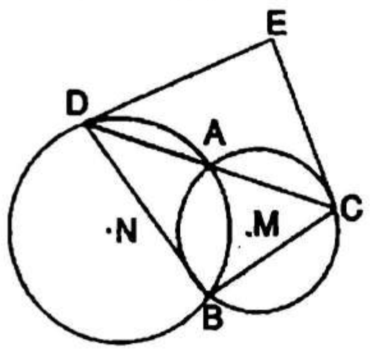
[B] In the opposite figure:

M , N are two circles intersecting at A, B

$\overleftrightarrow{EC}$ is tangent of circle M at C,

$\overleftrightarrow{DC}$ is tangent of circle N at D

Prove that ECBD is cyclic quadrilateral



End of the questions

MODEL EXAM NO (9)

[Q1] A) Choose the correct answer:

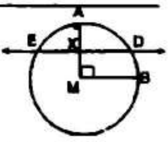
(1) If the circumference of circle 36 cm, then measure of an arc of length 6 cm = ... °

a) 30 b) 60 c) 90 d) 120

(2) A circle M of diameter 8 cm, A point inside it, if MA = (3X–2) cm then X ∈ ....

a) $]-\infty, 2[$ b) $[\frac{2}{3}, 2[$ c) $]\frac{2}{3}, 6]$ d) $[2, \infty[$

(3) In the opposite figure:

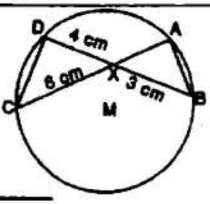


$\overline{MA}$, $\overline{MB}$ two perpendicular radii

$\overleftrightarrow{DE}$ is axis of $\overline{MA}$, then m($\angle\widehat{BD}$) = ...°

a) 30 b) 45 c) 90 d) 135

[B] In the opposite figure:

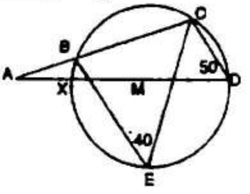


$\overline{AC} \cap \overline{DB}$ = {X}, XC = 6 cm

XD = 4 cm, XB = 3 cm

Find length of $\overline{AX}$

[Q2] A) Choose the correct answer:



(1) In the opposite figure:

DX is diameter in circle M

M(∠E) = 40°, then m(∠A) = ... °

a) 20 b) 30 c) 40 d) 50

(2) We can't draw a circle passing through A, B and AB = 8 cm if its radius .... cm

a) 3 b) 4 c) 7 d) 8

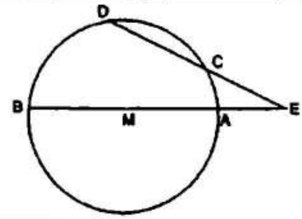
(3) The axis of symmetry of common chord AB for intersecting circle at A, B is ....

a) $\overleftrightarrow{MA}$ b) $\overleftrightarrow{MB}$ c) $\overleftrightarrow{MN}$ d) $\overleftrightarrow{AN}$

[B] In the opposite figure:

$\overline{AB}$ is diameter in circle M, $\overline{BA} \cap \overline{DC}$ = {E}

Prove that: EC > EA



[Q3]

[A] Choose the correct answer:

(1) Number of axes of symmetry of two touching externally circles is..........

a) Zero b) 1 c) 2 d) Infinite

(2) A chord of 8 cm in a circle of radius 5 cm, then its distance from center .... Cm

a) 1 b) 2 c) 3 d) 4

(3) ABCD is a cyclic quadrilateral, m (∠A) = 70°, then m (∠ BAD)=...°

a) 35 b) 55 c) 140 d) 220

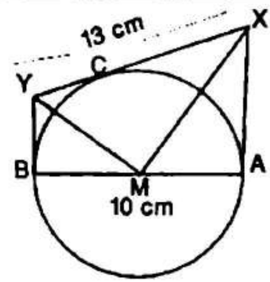
[B] In the opposite figure:

$\overline{AB}$ is diameter in circle M, AB = 10 cm

If C ∈ circle M, draw a tangent at C cut two tangents are drawn at A, B in X , Y, XY = 13 cm.

① **Prove** that: $\overline{XM} \perp \overline{YM}$

② **Find** area of AXYB



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[4]

[A] ABCD is a quadrilateral drawn in a circle, F ∈ $\overline{AB}$, draw $\overrightarrow{FE}$ // $\overline{BC}$ and cut $\overline{CD}$ in E, $\overrightarrow{DF} \cap \overrightarrow{CB}$ = {X}

Prove that: ① AFED is cyclic quadrilateral

② m (∠BXF) = m (∠ EAD)

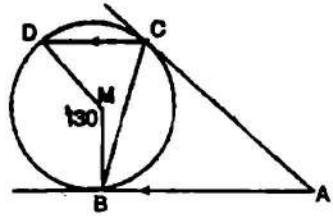
B) In the opposite figure:

$\overline{AB}$, $\overline{AC}$ are two tangents for circle M

$\overline{AB}$ // $\overline{CD}$, m(∠BMD) = 130°

① **Prove that**: CB bisects ∠ ACD

② **Find by prove** m (∠ A)



[Q5]

[A] In the opposite figure:

Two concentric circles at M,

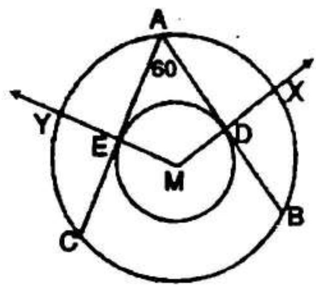
$\overline{AB}$, $\overline{AC}$ are two chords in greater circle

And touch smaller circle at D,E

Draw $\overrightarrow{MD}$, $\overrightarrow{ME}$ cut greater circle

at X,Y, m (∠DAE) = 60°

① Find m(∠DME) ② Prove XD = YE

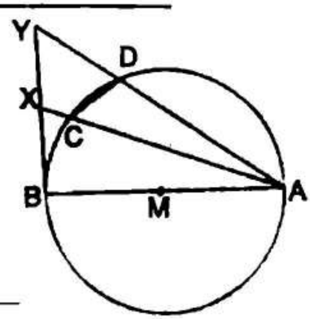


B) In the opposite figure:

$\overline{AB}$ is diameter in circle M, $\overline{YB}$ is tangent

Prove that:

DCXY is cyclic quadrilateral

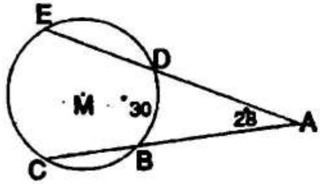


End of the questions

MODEL EXAM NO (10)

[Q1] A) Choose the correct answer:

(1) In the opposite figure:
$\overrightarrow{ED} \cap \overrightarrow{CB}$ = {A}, m($\widehat{DB}$)= 30°
M(∠A) = 28°, then m ($\widehat{EC}$) = ...°



a) 56 b) 30 c) 86 d) 28

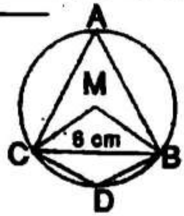
(2) If AB = 6 cm, then circumference of smallest circle passing through A, B = ... Cm

a) 3 π b) 6 π c) 8 π d) 9 π

(3) If ABCD is cyclic quadrilateral, m(∠A) –m(∠C) = 60°, then m(∠C)

a) 60° b) 120° c) 240° d) 360°

[B] In the opposite figure:



A circle M of radius $2\sqrt{3}$, BC = 6 cm

Find m (∠ A) , m (∠ BCD)

[Q2] A) Choose the correct answer:

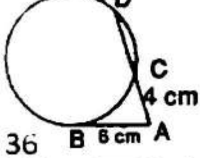
(1) M , N , L are three touching externally circles two by two, their radii 5 , 6 , 4 cm then perimeter of Δ MNL = ... cm

a) 15 b) 30 c) 40 d) 60

(2) The length of arc opposite to central angle of measure **120°** in a circle of radius r is ....

a) $\frac{1}{3}\pi r$ b) πr c) $\frac{2}{3}\pi r$ d) $3\pi r$

(3) **In the opposite figure:**
$\overline{AB}$ is tangent, AB = 6 cm,
AC = 4 cm Then CD = ... cm



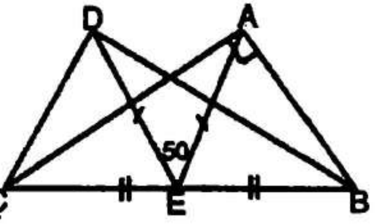
a) 5 b) 9 c) 12 d) 36

[B] In the opposite figure:

EB = EC , AE = ED

M(∠ AED) = 50°, m (∠ BAC) = 90°

Find m (∠ ABD)



[Q3]

[A] Choose the correct answer:

(1) A chord of 8 cm in a circle of diameter 10 cm, then its distance from center .... Cm

a) 1 b) 2 c) 3 d) 4

(2) Number of axes of symmetry of two touching internally circles is..........

a) Zero b) 1 c) 2 d) 3

(3) ABCD is a cyclic quadrilateral, m (∠A) = 2 m (∠C) , then m (∠ A)=................°

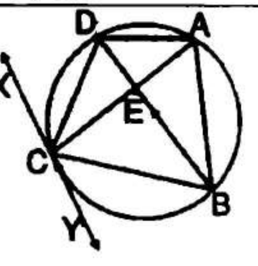
a) 35 b) 55 c) 140 d) 220

[B] In the opposite figure:

ABCD is quadrilateral is drawn in circle

Its diagonals intersect at E,

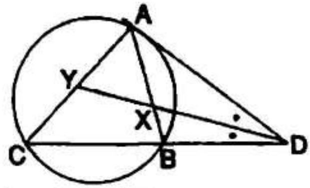
Draw $\overleftrightarrow{XY}$ tangent to circle at C where $\overleftrightarrow{XY}$ // $\overline{BD}$



Prove that: $\overline{BC}$ is tangent to circle passing through vertices of Δ ABE

[Q4]

[A] In the opposite figure:



$\overrightarrow{DA}$ is tangent at A, $\overline{DY}$ bisects $\angle$ ADC

Prove that: Δ AXY is isosceles triangle

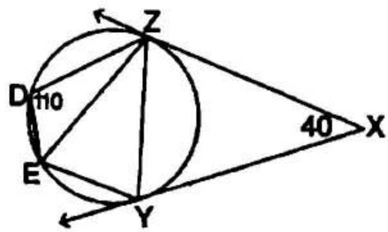
[B] ABCD is quadrilateral, m($\angle$A) = 7 X, m($\angle$B) = 4 X – 30°

m($\angle$C) = 2 X, m($\angle$D) = 5 X + 30°,

Prove that ABCD is cyclic quadrilateral.

[Q5]

[A] In the opposite figure:

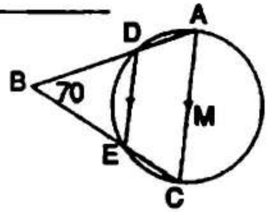


$\overrightarrow{XY}$, $\overrightarrow{XZ}$ are two tangents,

m($\angle$YXZ) =40°,m($\angle$ZDE) = 110°,

Prove that ZE = ZY

[B] In the opposite figure:



$\overline{AC}$ is diameter in circle M,

$\overline{DE}$ // $\overline{AC}$, m($\angle$B) =70°, Find m ($\widehat{DA}$)

End of the questions

MODEL EXAM NO (11)

[Q1] A) Choose the correct answer:

(1) A circle of radius 3 cm and its center is origin point, which of the following points lies on the circle?

a) $(\sqrt{5}, 0)$ b) $(2, \sqrt{5})$ c) $(1, \sqrt{3})$ d) $(1, 3)$

(2) Number of circles which passing through three collinear points is

a) Zero b) 1 c) 3 d) Infinite

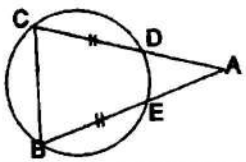
(3) In the opposite figure:
M(∠C) = 30°, m(∠B) = 20°
Then m (∠ AME) = ...°



a) 20 b) 50 c) 100 d) 120

[B] In the opposite figure:

$\overline{EC}$, $\overline{DB}$ are two equal chords
$\overrightarrow{DB} \cap \overrightarrow{CE} = \{A\}$.
Prove that: AD = AE



[Q2] [A] Choose the correct answer:

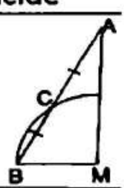
(1) A circle M of diameter (2X+5) cm, straight line L is distant from its center (X+2) cm, X >0, then L is ....circle

a) Outside the b) Tangent to c) Secant to d) Axis of the

(2) If AB is diameter in circle M, $\overleftrightarrow{AC}$, $\overleftrightarrow{BD}$ are two tangents, then AC ....BD

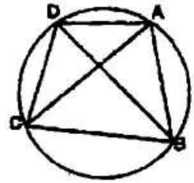
a) Intersect b) Parallel c) Perpendicular d) Coincide

(3) In the opposite figure:
A quarter circle of center M,
C is midpoint of $\overline{AB}$, Then m (∠ A) = ...°



a) 20 b) 30 c) 45 d) 60

[B] In the opposite figure:



AC = DB, AB = (3 X – 5) cm

DC = (x + 3) cm, find length of $\overline{AB}$

[Q3] [A] Choose the correct answer:

(1) If the longest chord in a circle is 12 cm, its circumference =.......

a) 6 π b) 12 π c) 24 π d) 144 π

(2) The radius of two circles M , N are 6 cm , 8 cm and MN = 14 cm, then the two circles are

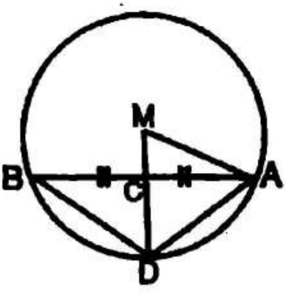
a) Intersecting b) Distant

c) One inside other d) Touching externally

(3) The inscribed angel in half circle is ....

a) Acute b) Straight c) Right d) obtuse

[B] In the opposite figure:



A circle M of radius 13 cm,

$\overline{AB}$ is chord of length 24 cm,

C .. m. point of $\overline{AB}$, $\overrightarrow{MC} \cap$ circle = {D}.

Find by proof area of Δ ADB

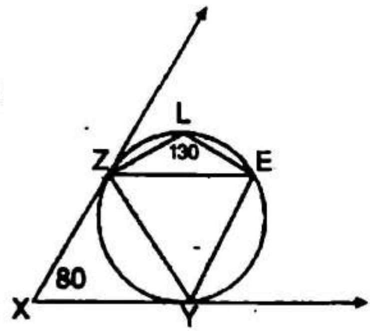
[Q4]

[A] ABCD is a square, $\overrightarrow{AX}$ bisects ∠ BAC and cut $\overrightarrow{BD}$ in X, $\overrightarrow{DY}$ bisects ∠CDB and cut $\overline{AC}$ in Y, prove that:

① AXYD is cyclic quadrilateral

② m (∠ AYX) = 45°

[B] In the opposite figure:



$\overrightarrow{XY}$, $\overrightarrow{XZ}$ are two tangents to circle at Y, Z

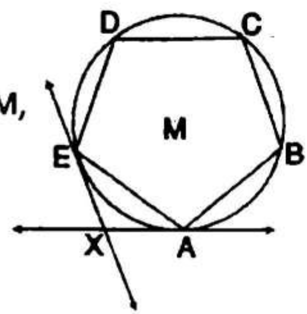
M(∠YXZ) = 80°, m (∠ELZ) = 130°

Prove that: ① ZE = ZY

② $\overline{XZ}$ // $\overline{EY}$

[Q5]

[A] In the opposite figure:



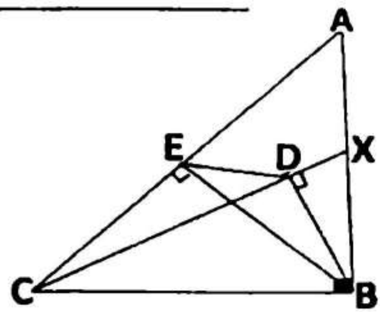
ABCDE is regular pentagon is drawn in circle M,

$\overleftrightarrow{AX}$ is tangent at A, $\overleftrightarrow{EX}$ is tangent at E

Where $\overleftrightarrow{AX} \cap \overleftrightarrow{EX}$ = {X},

Find m ($\widehat{EA}$) , m (∠ AXE)

[B] In the opposite figure:



Δ ABC is right at B, $\overline{BE} \perp \overline{AC}$, $\overline{BD} \perp \overline{XC}$

Prove that:

AXDE is cyclic quadrilateral□

End of the questions

MODEL EXAM NO (12)

[Q1]

[A] Choose the correct answer:

(1) The ratio between the measure of inscribed angle and the central angle are subtended by same arc equals ....

a) 1 : 2 b) 2 : 1 c) 1 : 1 d) 1 : 3

(2) If M, N are two circles are touching externally their radii 2 cm , 4 cm respectively, then the circumference of circle whose diameter $\overline{MN}$ equals .... cm

a) 4 π b) 6 π c) 8 π d) 12 π

(3) ABCD is cyclic quadrilateral, m (∠ A) = 2 m (∠ B) = 5 m (∠C), then the m (∠ D) = ...°

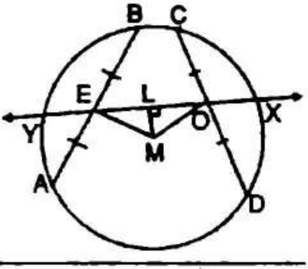
a) 30 b) 75 c) 105 d) 150

[B] In the opposite figure:

$\overline{AB}$, $\overline{CD}$, are two equal chords in the circle M,

O is midpoint of $\overline{CD}$, E is midpoint of $\overline{AB}$,

$\overline{ML} \perp \overline{XY}$, Prove that: OX = EY

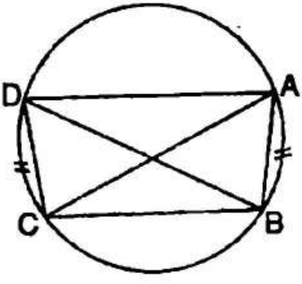


[Q2]

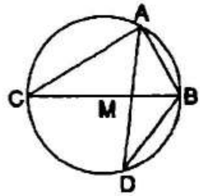
[A] In the opposite figure:

m ($\widehat{AB}$) = m ($\widehat{CD}$)

Prove that: $\overline{AD}$ // $\overline{BC}$



[B] Choose the correct answer:



(1) If $\overline{BC}$ is diameter in circle M, And its radius r, if AB = r, then m (∠ D) = ...°

a) 30 b) 45 c) 50 d) 60

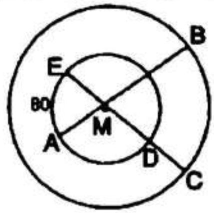
(2) A circle M of diameter 8 cm, if line L is outside the circle, then the distant between the center M and line L ∈ ....

a)] 4 , ∞ [b) [0 , 4 [c)] 0 , 4 [d) [0 , 4]

(3) In the opposite figure:

Two concentric circles M, m ($\widehat{EA}$) = 80°

Then m ($\widehat{CB}$) = ...°



a) 40 b) 60 c) 80 d) 160

[Q3] [A] Choose the correct answer:

(1) Number of axes of symmetry of two touching externally circles equals ....

a) 4 b) 2 c) 1 d) Infinite

(2) The circumference of circle in which passing through the vertices of a square whose side 6 cm equals ....

a) $6\sqrt{2}\,\pi$ b) $6\,\pi$ c) $12\sqrt{2}\,\pi$ d) $12\,\pi$

(3) The length of the arc is opposite to a central angle of 90° in a circle of radius r is .... cm

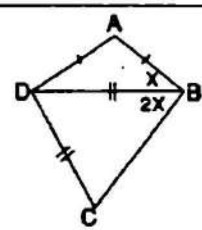
a) $2\pi r$ b) πr c) $\frac{1}{2}\pi r$ d) $4\pi r$

[B] In the opposite figure:

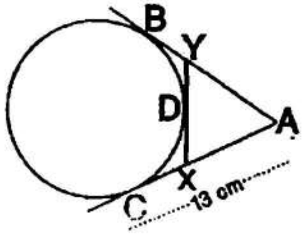
AB = AD, DB = CD

M (∠ ABD) = X°, m (∠ CBD) = (2 X)°

Prove that: ABCD is cyclic quadrilateral



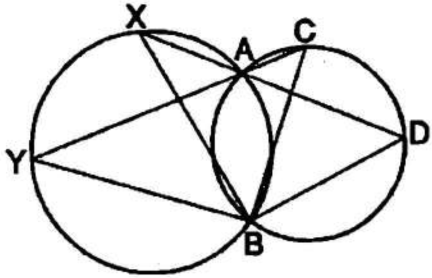
[4] [A]In the opposite figure:



$\overline{AB}$, $\overline{AC}$ are two tangent to the circle At B,C respectively, $\overline{XY}$ are tangent to the circle at D, AC = 13 cm

Find the perimeter of Δ AXY

[B] In the opposite figure:



Two intersecting circles

$\overline{AC}$ cut the smaller circle at C

And cut greater circle at Y

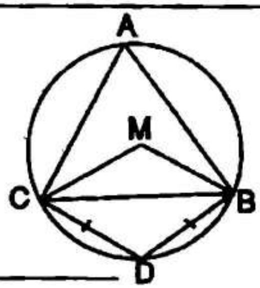
$\overline{AD}$ cut the smaller circle at D

And cut greater circle at X

Prove that:

m (∠ CBD) = m (∠ XBY)

[5] [A] In the opposite figure:

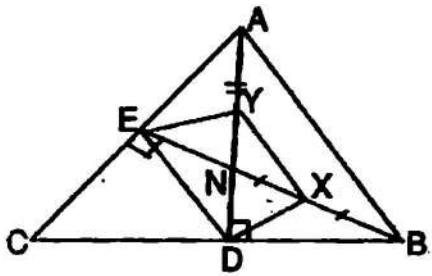


M (∠ BMC) − m (∠ A) = 50°,

BD = CD,

Find m (∠ A) , m (∠ DBC)

[B] In the opposite figure:



Δ ABC, $\overline{AD} \perp \overline{BC}$, $\overline{BE} \perp \overline{AC}$

X is midpoint of $\overline{BN}$,

Y is midpoint of $\overline{AN}$,

Prove that:

XYED is cyclic quadrilateral

End of the questions

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9

